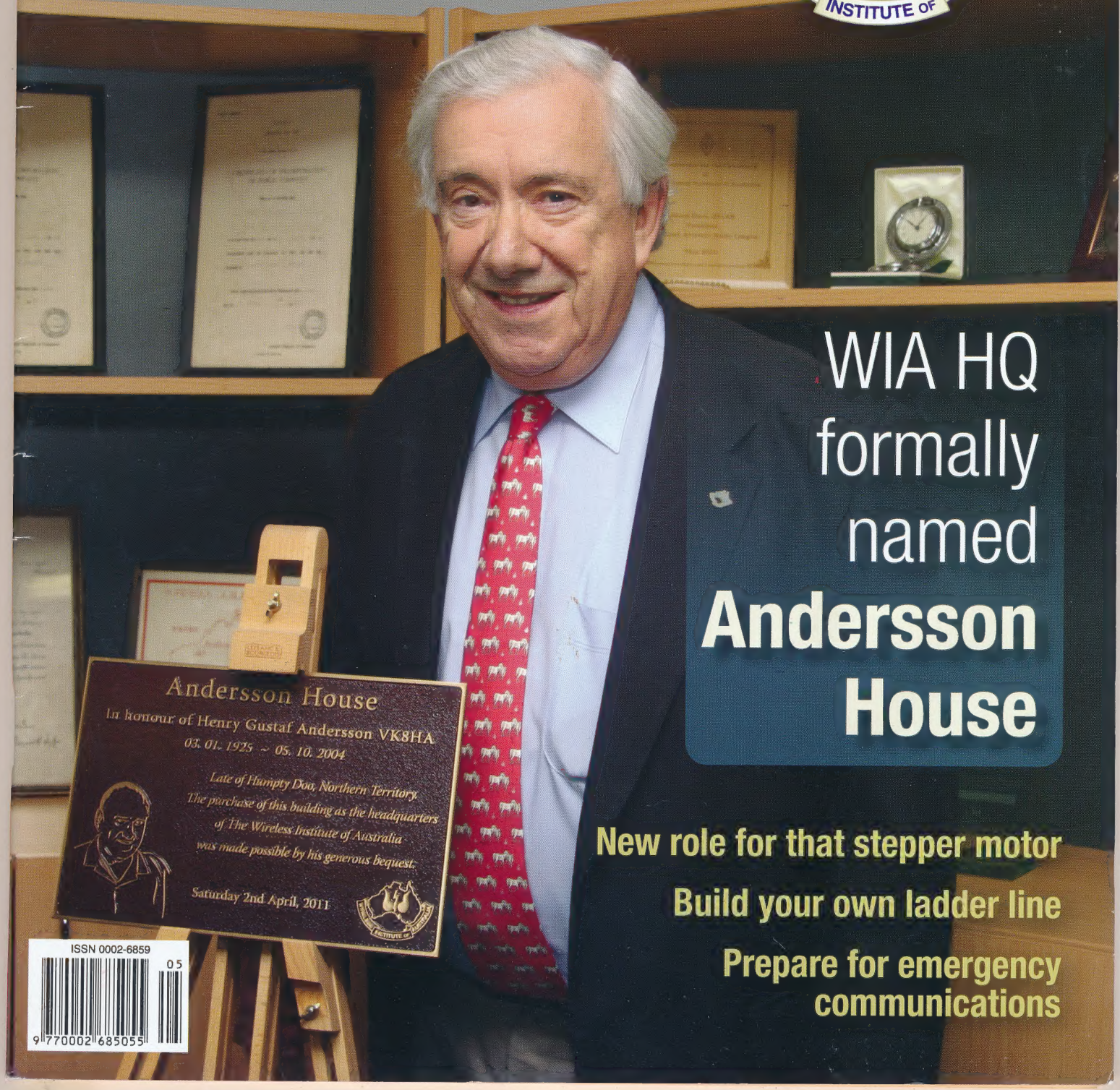
Amateur Radio

Volume 79
Number 5
May 2011
Price: $7 incl GST
www.wia.org.au


Andersson House
In honour of Henry Gustaf Andersson VK8HA
03. 01. 1925 ~ 05. 10. 2004
Late of Humpty Doo, Northern Territory
The purchase of this building as the headquarters
of The Wireless Institute of Australia
was made possible by his generous bequest.
Saturday 2nd April, 2011

WIA HQ formally named Andersson House

New role for that stepper motor

Build your own ladder line

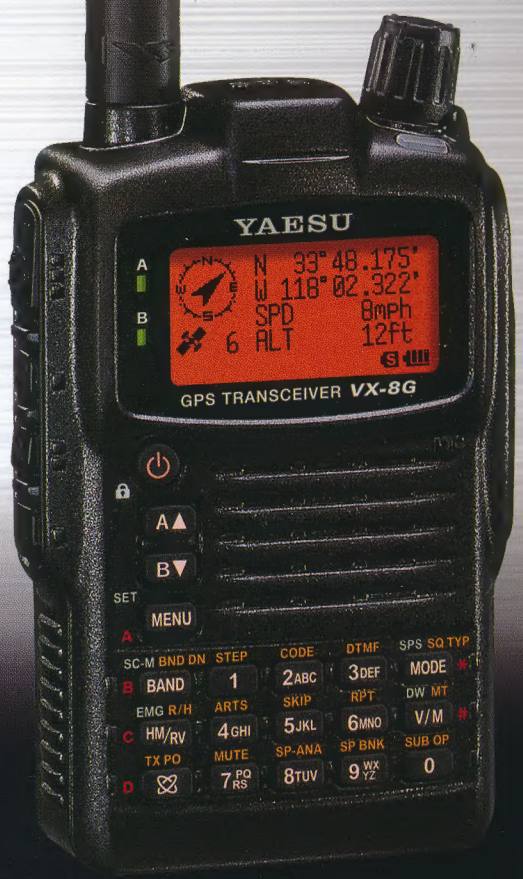
Prepare for emergency communications

ISSN 0002-6859
05

YAESU

A TECHNOLOGY BREAKTHROUGH

THE NEW PRESTIGIOUS COMPACT RADIO WITH APRS



VX-8DR/E **VX-8GR/E**

Vertex Standard (Australia) Pty Ltd
10 Wesley Court
Burwood East, Victoria, 3151
http://www.vxstd.com.au

Moorabbin Hamfest - 7 May

Amateur Radio

Volume 79
Number 5
May 2011
ISSN 0002-6859

The Journal of the Wireless Institute of Australia

Editorial

Editor
Peter Freeman VK3PF
editor-armag@wia.org.au

Technical Editor
Peter Gibson VK3AZL

Publications committee
Don Jackson VK3DBB
Evan Jarman VK3ANI
Bill Roper VK3BR
Ewen Templeton VK3OW
Ernie Walls VK3FM
Greg Williams VK3VT

All circulation matters
nationaloffice@wia.org.au

How to submit material
Secretary
AR Publications Committee
PO Box 2042
BAYSWATER VIC 3153
or *armag@wia.org.au*

Columns and letters to Editor
Editor AR Magazine
PO Box 273
Churchill Vic 3842
or *editor-armag@wia.org.au*

Hamads
'Hamads'
PO Box 2042
BAYSWATER VIC 3153
hamads@wia.org.au

Advertising
All enquiries to
Advertising Manager
AR Publications Committee
PO Box 2042
BAYSWATER VIC 3153
or *admanager@wia.org.au*

Registered Office
Unit 20 11-13 Havelock Road
BAYSWATER VIC 3153
Australia
Phone: 03 9729 0400
Fax: 03 9729 7325

Production Deadlines
General articles, columns and advertising booking 1st day of previous month. Hamads and advertising material 7th day of previous month.

The contents of Amateur Radio are Copyright Wireless Institute of Australia © 2011

General

Ipswich & District Radio Club partnership with Vertex Standard Australia (Yaesu) 5
Michael J. Charteris VK4QS

Western Victoria JOTA/JOTI weekend 21
Ash Clark VK3SSB

Amateur radio, bush walking, photography and fishing in the central highlands of Tasmania 23
Brian Morgan VK7RR

Presentation of Long Service medals for WIA members of Rockhampton & District Amateur Radio Club (RADAR) 27
Les Unwin VK4VIL

2011 WIA Urunga Radio Convention 35
Ken Golden VK2DGT

The road to Maldon 53
Jack Bramham VK3WWW

Cover photo

This month our cover shows Michael Owen VK3KI, President of the WIA, following the unveiling of the commemorative plaque during the formal opening of the WIA offices and the naming of the building as Andersson House. Photograph by Robert Broomhead VK3DN.

Technical

Foundation Corner 15 – Nostalgia or better engineering? Making and using parallel line 6
Geoff Emery VK4ZPP

A great old antenna, for not-so-great locations: the end-fed Zepp revisited (without the nasty RF issues) 8
Wayne Pickard VK2ACY

An introduction to stepper motors 9
Jim Tregellas VK5JST

Murphy's emergency communications 16
Bill Isdale VK4IS

Columns

ALARA 48
AMSAT 37
Contests 39, 42, 43
DX - News & Views 32
Editorial 2
Hamads 54
Spotlight On SWLing 52
VHF/UHF – An Expanding World 44
WIA Comment 3
WIA News 4, 38
News from:
VK2 31, 47
VK3 28, 51
VK4 36
VK5 30
VK6 34

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

Back Issues
Back issues are available directly from the WIA National Office (until stocks are exhausted), at $8.00 each (including postage within Australia) to members.

Photostat copies
If back issues are unavailable, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer
The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

ELECTORAL

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's oldest National Radio Society, founded 1910.

Representing

The Australian Amateur Radio Service

Member of the

International Amateur Radio Union

Registered Office of the WIA

Unit 20, 11-13 Havelock Road
Bayswater, Victoria, 3153
Tel: (03) 9729 0400 Fax (03) 9729 7325
email: nationaloffice@wia.org.au
http://www.wia.org.au

All mail to

PO Box 2042 BAYSWATER VIC 3153

Business hours: 10am – 4pm weekdays

National Office staff

Manager	Mal Brooks VK3FDSL
Administration Officer	Margaret Williams
Examination Officer	Dianne Ashton VK3FDIZ

Board of Directors

President	Michael Owen	VK3KI
Vice-President	Phil Wait	VK2ASD
Secretary	Sarah Thompson	VK3AUD
Treasurer	John Longayroux	VK3PZ
Members	Philip Adams	VK3JNI
	Bob Bristow	VK6POP
	Ewan McLeod	VK4ERM
	Chris Platt	VK5CP
	Peter Young	VK3MV

Coordinators

AMSAT	Paul Paradigm	VK2TXT
ARDF	Jack Bramham	VK3WWW
Australian ARISS	Tony Hutchison	VK5ZAI
Awards	Keith Bainbridge	VK6RK
Clubs	Ted Thrift	VK2ARA
Contests	Craig Edwards	VK8PDX
John Moyle Field Day		
	Denis Johnstone	VK4AE
Editor *'AR'*	Peter Freeman	VK3PF
EMC/EMR	Gilbert Hughes	VK1GH
	Keith Malcolm	VK1ZKM
Standards	Gilbert Hughes	VK1GH
	David Wardlaw	VK3ADW
	John Bishop	VK2ZOI
NTAC	John Martin	VK3KM
Historian	Peter Wolfenden	VK3RV
IARU Region 3 Liaison		
	Geoff Atkinson	VK3AFA
Intruder Watch	Karl Hennig	VK6XW
International Travel Host		
	John Miller	VK3DJM
ITU Conference & Study Group		
	Gilbert Hughes	VK1GH
	David Wardlaw	VK3ADW
	Keith Malcolm	VK1ZKM
	Brett Dawson	VK2CBD
	Dale Hughes	VK1DSH
QSL Curator	National Office	
Repeater	Peter Mill	VK3ZPP
Webpage	Robert Broomhead	VK3DN
Emergency Communications Group		
Coordinator	Phil Wait	VK2ASD
Members	Ewan McLeod	VK4ERM
	Peter Young	VK3MV

Editorial

Peter Freeman VK3PF

AGM approaching fast

This issue of the magazine is being prepared in early April and will hopefully reach most members just prior to the Easter break. This will give anyone not yet committed to attending the WIA Annual General Meeting in Darwin at the end of May only a short window to decide and to make all their arrangements.

I am sure that the program will be very interesting and am somewhat disappointed that I will not make the trip. The semester timetable at work will have me extremely busy with teaching related tasks which makes the timing impossible for me personally. I am sure that everyone involved with the AGM will have a good time and I look forward to reading reports of the event in due course. We may be able to include some news in the July issue, but such reports will need to be submitted immediately after the event, as our nominal deadline for submission of material for that issue is the very start of June.

Local radio club activity

At the local club, we have started detailed planning for our annual GippsTech Technical Conference, to be held at Monash University Gippsland Campus in Churchill over the weekend of 9 and 10 July. We will soon have more detailed information available on the club website (*www.vk3bez.org*). A registration form will be available as soon as we have confirmed all costs and catering arrangements.

The conference is a great place to catch up on all things related to weak signal communications on the VHF, UHF and microwave bands. Not only will you be exposed to presentations on various aspects of such communications, you will also have plenty of opportunity to talk to many experienced operators involved in such communications – we usually have around 100 amateurs attending the conference. The informal discussions are as important to many as the more formal presentations, as is evidenced by the difficulty that we have in breaking up the various groups at the end of a break to get them back into the lecture theatre for the next formal presentation. Presentations vary from short practical ideas or techniques through to detailed presentation illustrating the coming together of theoretical considerations to produce practical results or to predict what may be possible.

The conference program has only just started to form, with only a small number of speakers committed at this time, but we usually have a packed program. The program information will be published on the club website once it has a little more detail. You can also keep an eye on the discussion board on the VK LOGGER site.

WIA office formal opening

Only last weekend (as I prepare these notes) the WIA formally opened its premises in Bayswater, with the building named *Andersson House*.

The event is featured on the front and inside back covers of this issue, with a report of the formalities in President Michael Owen's Comment.

The event was telecast live via the Melbourne ATV repeater and to potential viewers around the world via the BATC website. A video clip can also be found on the WIA website – look under the News section for April 2011. The clip is just under 10 minutes long.

I did not make the trip down to Bayswater, as I had been in hospital the day before to undergo a minor surgical procedure. Nothing serious, it was just a follow up to a positive screening test result. With all such screening results, it is always better to have all options checked as soon as possible. In my case, all was declared to be normal, so no worrying for me for the immediate future. So instead of travelling to Bayswater, I spent the day recovering at home and preparing material for upcoming teaching tasks.

Well, that is all for this month.

Cheers,

Peter VK3PF

WIA comment

Michael Owen VK3KI

Andersson House

The naming of the WIA's premises in Bayswater, Victoria to honour Henry Andersson VK8HA had a very special meaning for me.

Not that I knew Henry personally, but as a result of his bequest to the WIA I had visited Darwin, visited his house and talked to his friends about him.

It was all very soon after the WIA restructured in May 2004. Henry died on 5 October 2004.

I wrote about Henry, his bequest and the people from Darwin who had helped me so much in this column in the July 2005 issue of *Amateur Radio*. Perhaps that is one of the reasons I am looking forward to returning to Darwin at the end of May this year for our Annual Conference.

I concluded what I said in July 2005 by saying that we must make sure that we do not forget Henry Andersson, and of course, now I know we will not.

May I repeat what I said at this important event on 2 April this year? It is, after all, a focus of this issue. And it is my tribute to someone I did not know in life, but as a result of visiting his home and talking to his friends, someone I felt I did know in a different way.

And let us not forget that the generosity of Henry Andersson is so important, as without that bequest we would not have our own premises, and without our own premises we would forever be constrained in what we can do.

Henry Gustaf Andersson VK8HA died in Darwin on 5 October 2004.

By his will Henry left his "house and lands" to the WIA.

In the July 2005 issue of Amateur Radio magazine, after saying that I had never met Henry Andersson, I said this of his bequest to the WIA:

"His generous bequest during this period of change, as we work to create a single national body, gives us great hope and great confidence, because it means that we now have some reserves that at least give us confidence.

As I say, I never met Henry.

But we must make sure that we do not forget Henry Gustaf Andersson VK8HA, SK."

Today we make good that commitment.

Today we name our national headquarters in honour of Henry Andersson.

Henry Andersson was born in Sweden and had come to Australia many years ago.

Henry built his house at 30 Trippe Road, Humpty Doo in about 1988, on some five acres of land. Humpty Doo is on the Arnhem Highway, a few kilometres from the Stuart Highway, in all some 40 minutes or less drive from central Darwin.

Henry erected three antenna towers on his land.

There were two other amateurs in the Northern Territory who had come from Scandinavia and with a similar background to Henry and who were among his real friends. One was Karl VK8CAW from Darwin, and the other was Len VK8DK, from Tennant Creek. I have met them both, and we have talked of Henry.

President Michael Owen VK3KI inspecting the memorial plaque

Henry was a passionate CW operator, and became a member of the First Class Operators Club (FOC) in 1970.

Henry was an Honorary Life Member of the WIA, his QSL card proudly proclaiming that he was the first Honorary Life Member of the WIA "in VK8".

Henry had set up and ran the VK8 QSL Bureau for some 38 years.

He was the first Federal Intruder Watch Coordinator, and was appointed National Intruder Watch Coordinator when the WIA Board met in May 2004.

Henry Andersson was a unique person, supporting amateur radio and the WIA over many years, contributing significantly in that most important but often frustrating role of coordinating Intruder Watch, now called the Monitoring System, a task that requires skill to identify the intruder and patience to persist when there is not much response to the reports.

It is fitting that in the year we are holding our Annual Conference in Darwin we honour this great radio amateur from Darwin, without whose generosity we would not have our own national headquarters.

It is my privilege to unveil our recognition of Henry Gustaf Andersson's contribution to amateur radio as we now name our national Headquarters *Andersson House*.

WIA news

Board decides to increase some WIA subscription rates but creates special category for younger students

Way back on 20 and 21 February 2010 the WIA Board considered the WIA's finances in some detail and decided to increase most of the WIA subscription rates.

The implementation of this decision was delayed as we had to overcome some problems with our software.

Those have now been (hopefully) overcome.

At its meeting on 2 April 2011 the Board reviewed the earlier decision, aand decided that some increases were essential and will take effect from 1 June 2011.

Why did the Board decide an increase was necessary?

The current subscription rate is the rate that was fixed in May 2004, when the new Constitution was adopted. The Board noted that the Australian Bureau of Statistics figures showed a 16% Consumer Price Index (CPI) increase for five years during the period since May 2004 to 2010.

The Directors concluded that the Consumer Price Index, the statistic that is accepted as a reasonable measure of inflation, cannot be ignored and must be reflected in the WIA's subscription rates.

In discussing the issue, the Directors noted that there was not really a great difference between the current ordinary annual subscription rate and the subscription rate for concession members. They felt that a greater difference was justified.

Accordingly, the Board has decided to increase the ordinary membership and overseas membership annual subscriptions by $5, but not to increase the concession or family subscriptions.

The Directors also considered the fee currently charged to students, a category that has been treated on the same basis as other concession members. There are very few student members, though we know from our administration of the amateur qualifications, many young people are joining our hobby. It was accepted that many younger people would not be able to afford even the current unchanged concession fee, but if they could be attracted to join the WIA, they could become members for many years.

Student members were defined as full time students under 25, and they will be charged a special fee of $35 a year. Five year memberships will not be available to student members.

While the other changes come into effect on 1 June 2011, this change comes into effect immediately.

All the current and new fees are shown on the table above.

A Family Member is a second or further person living at the same address as a Member or Concession Member receiving AR (the Primary Member). A Family Membership must be linked to a particular Primary Member at the same address. A Family Member does not receive AR.

The Board decided that those increases would only apply to subscriptions paid on and after 1 June 2011.

This means that if a member wishes to pay a subscription before it becomes due (even a 5 year subscription) so long as it is paid before 1 June 2011, the WIA will accept the subscription at the lower and now current rate.

WIA Membership Fees

Member Type	Years	Current Fee	Fee after 1 June 2011
Full Membership	1	$75.00	$80.00
Full Membership	5	$356.00	$380.00
Overseas Member	1	$85.00	$90.00
Overseas Member	5	$403.00	$427.00
Concessional Membership	1	$70.00	$70.00
Concessional Membership	5	$332.00	$332.00
Student	1	$70.00	$35.00
Family Membership	1	$30.00	$30.00

Macedon Ranges Amateur Radio Club runs first Foundation course

Macedon Ranges Amateur Radio Club ran its first Foundation course over two weekends in February bringing new folk to the amateur bands and bolstering their membership.

The course facilitator was Peter Willmott VK3TQ who was assisted by Joe Aprile VK3GFA and Bob Robinson VK3SX. The course was run over two weekends, Peter said while many courses run over one weekend the club decided to have the course over two weekends so students could take the time and learn, it also gave a lot of one on one time with students and gave time to explore in greater detail topics like operating ethics, ACMA and WIA, basically how everything fits.

The club is excited that it now has eight new Foundation licensees and one new Standard licensee.

New IARU Region 3 Secretary

The Directors of IARU Region 3 have announced the resignation of Seiichi (Jay) Oka JA1TRC as Secretary of IARU Region 3 from 9 March 2011. Jay became Assistant Secretary to Keigo Komuro JA1KAB then the IARU Region 3 Secretary in September 1998 and on Keigo's resignation, Secretary in June 2009.

The Directors have appointed Katsumi (Ken) Yamamoto JA1CJP as Secretary of IARU Region 3 on the nomination of JARL. In nominating Ken as Secretary, JARL President Shozo Hara JA1AN reaffirmed his society's strong and continuing support of IARU Region 3 and its secretary, at the same time stressing the importance of the regional secretary's independence from any member society.

Continued on page 38

Ipswich & District Radio Club partnership with Vertex Standard Australia (Yaesu)

Michael J. Charteris VK4QS
President
Ipswich & District Radio Club
Chairman, Queensland Advisory Committee, WIA

In the March 2011 Edition of *AR* magazine, I outlined the successful celebration that was held by our Radio Club with our local councillor Mr Andrew Antoniolli and the Mayor of Ipswich, Mr Paul Pisasale. It was on this day, that the Mayor was kind enough to make a significant Community Grant to our Club, with a view to upgrading our somewhat old radio transceivers that hailed from the 1970s. The genesis of this event started at least two years before with the invitation and interaction with our local member, Mr Andrew Antoniolli. Andrew was invited to visit our Clubhouse, whereupon we explained our Club history and our vision for the future as regards the role of the Club in the community.

Now all of a sudden the Club had the funds to purchase a new radio transceiver for the first time in nearly 50 years. The big question on everyone's lips was "What are we going to do?" After some discussion with my fellow members, I came up with an idea to approach one of the big communications manufacturers to see if they would be prepared to get onboard with a community based radio club like ours. I had no pre-expectations as to what might transpire, only that I was prepared to inquire most humbly, state our case and offer to push their barrow for what it was worth on our Club Website and in our local media should they be forthcoming.

What transpired exactly, I will not go into in detail, but I will say that, with a bit of imagination and good will on both sides of the fence, we succeeded in obtaining for our Club a new Yaesu transceiver. I was in this regard, most fortunate to have the opportunity to deal with Miss Felicity Boulter, the Sales Manager for Vertex Standard Australia – Yaesu as we know the brand. Felicity saw the possibilities of a working partnership with our Radio Club in a mutually beneficial operation.

L to R: Councillor Andrew Antoniolli, Miss Felicity Boulter from Vertex Standard, Mr Paul Pisasale, Mayor of Ipswich, and Club President Michael Charteris VK4QS celebrating at our BBQ on 23 March 2011.

The culmination of all these negotiations based on my proposal to Vertex Standard saw our Club organize an "Official Handover BBQ" that took place on 23 March 2011. Many would remember this as the John Moyle Field Day. Our distinguished guests for the day included the Mayor of Ipswich, Mr Paul Pisasale, and our local councillor Mr Andrew Antoniolli. The icing on the cake saw Miss Felicity Boulter fly up from Melbourne for the day to celebrate this momentous occasion. It goes without saying that a picture paints a thousand words, as can be seen by the smiles on the faces of all those photographed. This day saw our radio club achieve its goal in the form of a brand new Yaesu FTDX-5000, thanks to both the Ipswich City Council and Vertex Standard Australia. The festivities did not stop there as Felicity was kind enough to donate a couple of Yaesu jackets and coffee cups which were raffled successfully among the guests present. I would like to thank those gentlemen who travelled from as far away as the Gold Coast and Toowoomba to help us celebrate. I would also like to thank all those members who soldiered in the rain to secure the tarp so that our BBQ could actually proceed despite the inclement weather.

Finally my friends, the message is this: Invite your local councillor to the clubhouse and express your aspirations as a Club, to interact with your community. Throw a few "free" BBQs (ask your local councillor for funding for sausages, etc), invite the Mayor, inform the local media for photo opportunities. And bring to their attention the great value of having a successful amateur radio/electronics club in your city or town. Be sure to mention values such as education and emergency communications. And when eventually you receive some funding for new "radio equipment", consider contacting Felicity at Vertex Standard to discuss how your radio club could develop a partnership where everyone wins for the benefit of all. I will be eternally grateful that we, at the Ipswich & District Radio Club actually did contact Felicity.

Generate some radio fellowship in your community today.

Foundation Corner 15 – Nostalgia or better engineering? Making and using parallel line

Geoff Emery VK4ZPP

vk4zpp@wia.org.au

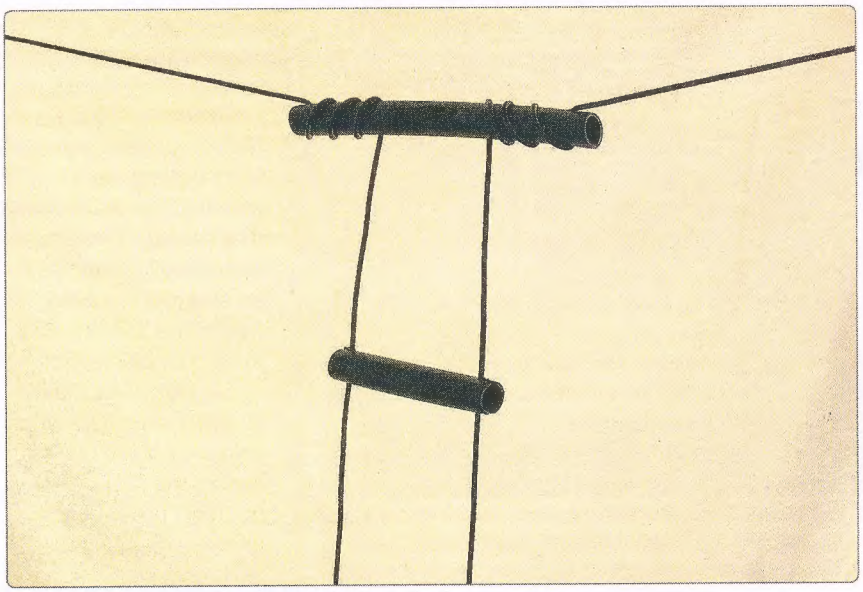


Photo 1: Open wire feed to centre fed dipole.

As part of the practical assessment for your amateur licence, you had to be able to identify different types of antenna feed line. Chances are that the sample of parallel line was either a piece of commercially made 450 ohm transmitting line or 300 ohm TV ribbon. We will look at different ways of making your own parallel line and the benefits of open wire feeders as against the ubiquitous coaxial cable.

If you look at the specification sheets for RG-58 cable you will find that at the 30 metre length you may be losing 3 dB of signal at 28 MHz. Just think of it this way; that translates to half your power from the transmitter and half the signal from the aerial is lost in the cable. Compare this with the same length of parallel line and the losses are negligible.

For this reason, when TV came to Australia, it was parallel line that was used and not coax in the early installations. Of course, the installer of parallel feed lines has to remember the basics, namely, even straight runs of wire exhibit L - inductance, and parallel conductors exhibit C - capacitance. With TV antennas mounted on steel masts, a range of standoff insulators was made. To reduce the capacitance between the line and the mast an added twist about every seven cm balanced each run of wire to the mast.

You will see in the ARRL Handbook, and other publications, illustrations of wooden or other insulating materials holding out the feed line from a conductive mast. Not many installations used by amateurs use the twisting technique to equalise the capacitance in each parallel lead because, generally, the reactance encountered at HF is not a significant problem. If you wish to experiment at 2 metres or 70 cm, then remember this fix.

There are special variations and uses of specific lengths of parallel line and if you look back to Foundation Corner One, *Amateur Radio*, September, 2009, you will see one of them in the Slim Jim/J-pole matching stub. The lower quarter wave section is a section of parallel line and the feed point is tapped along this to find an appropriate impedance match for the feed line. For a single band antenna, the Q-section, as it is known, has been a convenient matching device. The shorted Q-section has the advantage that it provides a DC ground and static and lightning drain for the antenna system. In fact the shorted quarter wave is also known as a 'metallic insulator' and has been used to support parallel lines to fixed frequency antennas. The RF follows the lines and the DC grounding helps protect the associated equipment.

However, these are areas that you can research for yourself. Let us get back to the practical approach to open wire feeders or parallel lines. You have basically two choices. You can contact a supplier and pay for commercially made 450 ohm line or ..... homebrew your own.

This is not a "follow the dot" point presentation as each amateur will have experiences and materials that they will apply to the task. The standard reference manuals and the Internet can provide specific ways of making and using open wire feeders.

Of course, if you stumble on a source of 300 ohm TV feeder, this can be used, certainly for powers up to 100 watts. As we mentioned, above, it is important to have a high dielectric constant (be a good insulator at RF) and for this reason for amateur transmitting use only the old "dog bone" or slotted TV line. I can remember reading in a copy of *Radio, TV & Hobbies*, the predecessor to *Electronics Australia*, a recommendation that TV ribbon should be washed every couple of years to remove the contamination that settled over the plastic sheath! I have used 300 ohm ribbon at UHF and after rain watched the VSWR vary enormously until the feed line was again dry.

What we need is enough wire for twice the length of line we need. At Foundation power, it would be possible to use single strand bell or blasting wire but mechanically it would be more prone to fracture from movement than thicker wire. Multi-strand cable is the preferred 450 ohm commercial lead in that it is less likely to fracture from vibration; this can be important if your QTH is subject to storms or gusty winds.

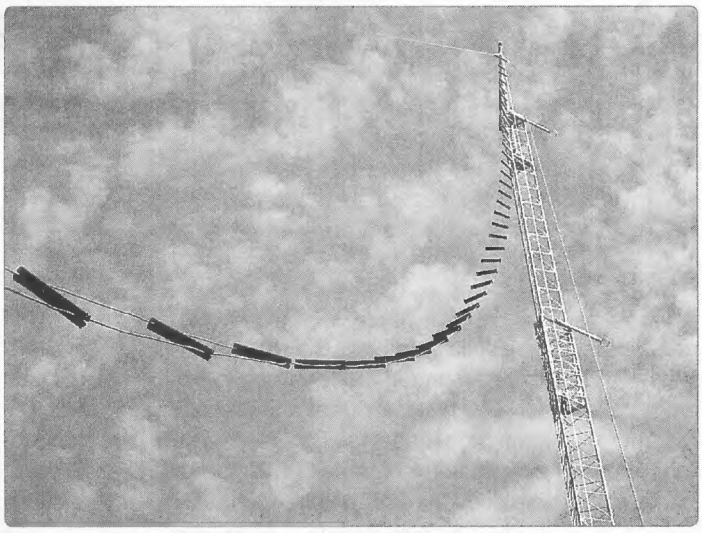


Photo 2: Open wire feed to tower.

Soft drawn copper, such as enamelled copper wire, has a tendency to stretch over time so unless you have no other alternative, try to make another choice. You can pre-stretch and partly work harden soft copper wire but it can be a long, tedious job and hard to accomplish on one's own. What we have to balance out is durability, mechanical strength and the suspended weight to be carried by the antenna.

If you can obtain it, aerial telephone cable works well. You have to strip the sheathed steel catenary from the copper pair. Keep this as it is remarkably strong and can be used for mast guys or vegetable trellises, and so on. Next strip the sheathed copper pair apart; roll loosely to prevent kinking and prepare the spacers.

One thing we need to ensure is high insulation (dielectric constant) in the spacers. If you wish to go retro you can get hard wood lathing (thin wooden strip), which after cutting and drilling, you can boil, in paraffin (surf board wax) for an hour for weatherproofing.

Today we have a choice of materials that are easy to work with, and cheap. Low pressure garden drip line comes in large coils and is cheap, easy to cut and drill but may deform (altering the characteristic impedance of the line) if subjected to too much heat. Ice cream sticks from your handicraft store are cheap but they have to be well sealed with outdoor varnish (not paint which will probably contain metallic pigment) or they will absorb moisture.

One item is the jointing strip for compressed woodchip flooring. In the Queensland sun, it has been found UV stable and does not distort readily. If you can get exterior grades of PVC conduit, take a small sample and microwave it with a cup of water (to provide a load for the magnetron) for one minute. If it does not soften, it is suitable for RF use.

If you refer to standard amateur reference books, particularly those from the ARRL, you will find nomographs, showing the spacing versus impedance for different wire sizes. There is nothing magical in most applications between 450 ohm and 600 ohm line but a spacing of at least 50 mm between conductors is wise to increase the insulation and prevent arc over if high voltages are induced in the antenna system. 100 mm and 150 mm are probably good choices and depending on the flexion of the wires, spacers every 600 mm to 900 mm will maintain good geometry in the feed line.

All the cutting and drilling can be done using normal handyman tools and the last part of the job is fixing the spacers so they do not slide down in use. If you use sheathed cable, ordinary acetic acid cure silicone sealant squeezed into and around the wire and drill hole will suffice. If you are using bare wire, it will be best to use neutral cure. Other methods are given in some of the reference books, such as using thin wire 'twist ties'. This is probably fine for most HF applications but introduces a small L-C component at each spacer, which may be significant at higher frequencies. Certainly the silicone method is about the fastest to apply but needs some hours for effective curing. Do not discount epoxy cement but try it on a sample of the spacer and wire to check that it does properly key and hold.

Once you have made your open wire feeder/parallel line check the specifications against those of some of the better Heliax® type feeders. You will at least have a comparable item and have the satisfaction of having completed a home brew project and saved a bundle too!

If you need to put bends in your line or give it support, some amateurs have found line trimmer cord suitable. The other support of choice is the marine 'silver' cord, which is designed to survive in harsh environments, and, of course, the blue and yellow pull through rope discarded by the telecommunications industry. However, remember the suspended weight is going to alter the geometry of a wire antenna if it is too great. Make the bends as gentle as possible, that is, with the widest arc that will do the job.

Remember that our hobby is experimental and aimed at self learning. Most of us learn more after we get out 'ticket' than before. For this reason, I have not tried to join all the dots for you. What we teach ourselves is often better remembered than what we are taught by others. Happy home brewing!

An interesting YouTube video on making ladder line using a cheap kitchen chopping block for insulators can be viewed at: *http://www.youtube.com/watch?v=D--K4Uc5p0I*

A great old antenna, for not-so-great locations: the end-fed Zepp revisited (without the nasty RF issues)

Wayne Pickard VK2ACY

Those who know me are aware that I am fascinated by all things 'retro' as my station's equipment line-up testifies. Just do not get me started talking about the history of the Theremin, for instance. Similarly, I have spent a great deal of time getting my head around how things were done in the early days of radio, particularly within the amateur service worldwide. Many hours of pawing through very old copies of QST and similar publications during my early teenage years has left indelible impressions of old designs which have long fallen out of use, as knowledge and technology has advanced.

One such design, which has remained in my memory, is that of the end-fed half wave 'Zepp' antenna, which was named after the famous airship on which it would have possibly been used. This antenna, while known to work satisfactorily enough, has been much maligned for numerous reasons, not only because of the nasty RF voltages that it maintained at its feedpoint, but also because of the levels of interference it was sometimes capable of producing. Nevertheless, my recollections have persisted of a description within those old publications of a way of feeding the end-fed half wave in such a way as to provide a low impedance (current) feed, and also a more recent article which gave exact dimensions for doing this utilizing standard 300 ohm ribbon cable as the matching section. After many hours searching in the shack, and researching on the internet, I resolved that if a working version was ever going to materialize, I was going to have to put in the 'hard yards' all by myself.

While starting with what I knew to be an empirically derived length for a 40 metre half wave antenna, I then proceeded to anguish over the correct length for the 300 Ω ribbon matching section. After much trial and error, the resulting antenna looked something like Figure 1. The resulting antenna was found to have a measured SWR of better than 1.3:1, and was quite broadband, enabling operation across the entire 40 metre band without need for retrimming or use of an ATU. These measurements were determined using a measured length of RG58 coax 21.35 metres long. Other lengths were also tried; however it was observed that a length of 14.75 metres resulted in matching difficulties. Either way, my previous experiences had well prepared me for also avoiding lengths which approximated odd multiples of a quarter wave length, again allowing for the coax's velocity factor.

Direct comparisons against a temporarily erected 40 metre standard half wave dipole at the same height, 10 metres, over time revealed that this antenna certainly may provide the 'edge' for those locations where extremely poor soil conductivity is known to be an issue; not to mention that it does not require an earth. Conveniently, it could also be configured as a vertical, inverted V, or sloper depending upon available supports and the coverage required. Scaling up or down in size for other bands should also be achievable, and I will leave it up to those adventurous readers who wish to determine the correct lengths for themselves. As for myself, this is one antenna that will remain a 'keeper' I expect for a good while to come.

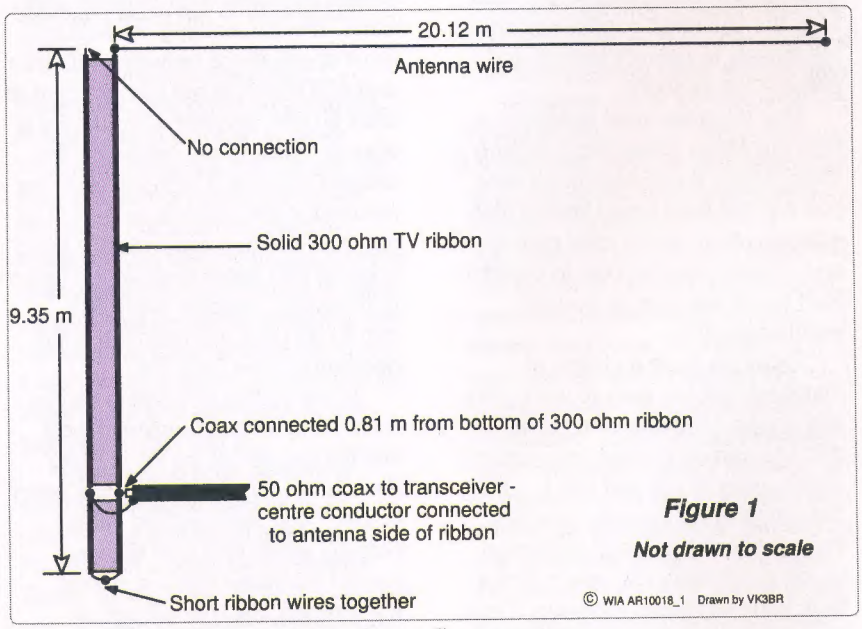

20.12 m
Antenna wire
No connection
Solid 300 ohm TV ribbon
9.35 m
Coax connected 0.81 m from bottom of 300 ohm ribbon
50 ohm coax to transceiver - centre conductor connected to antenna side of ribbon
Short ribbon wires together
Figure 1
Not drawn to scale
© WIA AR10018_1 Drawn by VK3BR

Figure 1: The author's end-fed half wave Zepp antenna.

An introduction to stepper motors

Jim Tregellas VK5JST

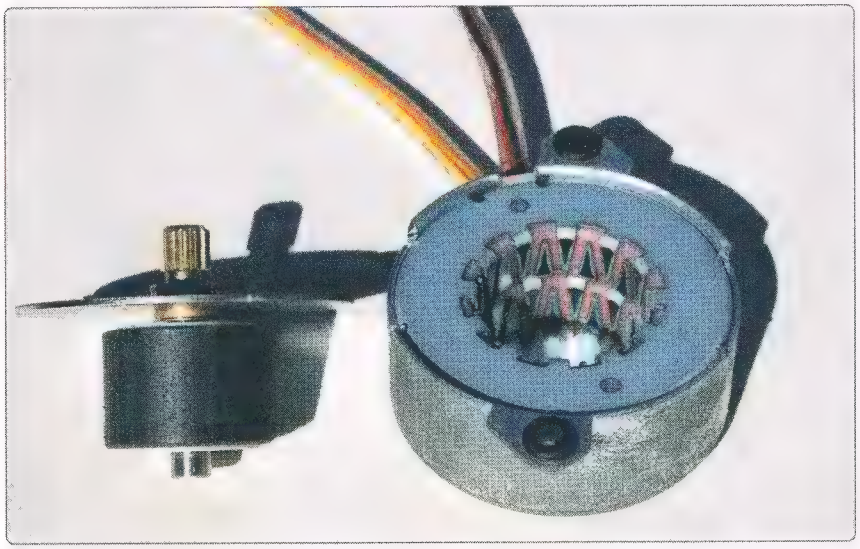


Photo 1: A disassembled 'tin can' stepper motor, showing field and rotor poles.

I have recently been involved in making a magnetic loop antenna for 80 metres and to tune this very narrow band system, once again found myself using a stepper motor. These motors are around our society in very large numbers but are not well understood. From an amateur radio point of view they are very useful for many things and examples include the remote operation of linears and antennas, automatic ATUs and antenna rotators. If you like to play around with robotics and CNC machine control then steppers are indispensable. And used in reverse as a generator, stepper motors make very good rotary position indicators.

General

Stepper motors come in many styles, but their operation basically involves only one of two things – an energised field coil which attracts a pole of a permanent magnet rotor – or an energised field coil which attracts the pole of a soft iron rotor. The first type of motor is known (obviously) as a permanent magnet motor, while the second type is called a variable reluctance motor. Permanent magnet motors are very common while variable reluctance units are quite rare.

The rotors of both of these motor types move round in small angular steps as the energy to adjacent field poles is switched on and off. Typical motors take between 24 and 200 steps (15 deg or 1.8 degree steps) to complete one revolution. The ability to rapidly start and stop with great angular precision is the most important advantage of these motors.

The permanent magnet motor retains its rotor position even when power is removed. The number of steps per revolution can be determined by turning the rotor by hand through one revolution and counting the number of 'bumps' which occur as the rotor regularly realigns itself with the field poles. This effect is called 'cogging'. Conversely when all power is removed from the field coils of a variable reluctance motor, the soft iron rotor turns quite freely. This may be an advantage or disadvantage depending on the application. This form of motor must have a field coil lightly energised before the number of steps per revolution can be counted.

Motors are made in various qualities. The cheapest are 'tin-can' motors which generally only offer 24 – 48 steps per revolution and will have sintered bronze self lubricating bearings. The rotor is a smooth cylinder of iron or ferrite with a pattern of alternating north and south poles imprinted parallel to its shaft on its surface. These rotor poles interact with two sets of pressed metal field poles which radiate from two field coils outside the rotor at its top and bottom. Motors constructed this way have relatively large air gaps between the rotor and stator due to manufacturing tolerances and generally do not deliver very high torques or speeds - but they are cheap. An example of this motor has been disassembled and is shown in Photo 1. The rotor has been lightly sprinkled with iron dust to show the pattern of magnetization and the two sets of offset field poles should be noted.

Better quality motors will almost always use ball bearings, and these, together with finely ground salient rotor and stator pole faces, allow much tighter tolerances and smaller air gaps. Such motors are capable of great torque and high stepping speeds. The diagram showing the 20 step/rev demonstration motor, refer Figure 1, shows the typical internal construction. All of the motors shown in Photo 2 are high quality units.

There are several ways of specifying motor size but the best is probably the NEMA system invented in the USA. A NEMA specification basically defines three things, motor outside diameter (in inches), mounting centre details, and shaft diameter. So a NEMA style 23 motor (commonly found in large dot matrix printers) has a diameter of 2.3 inches (57 mm), a shaft diameter of 0.25 inches (6.35 mm), and four well specified mounting points on a flat face.

Note that a NEMA specification does not specify the length of the motor frame and so a long frame NEMA style 23 motor (with its longer magnetic poles) will deliver more power and torque than a short frame NEMA style 23.

Photo 2: NEMA styles 17 (front), 21 and 34 motors.

But in general, commonly available motors usually have a diameter and length which is roughly the same.

Excellent amateur scroungers will probably accumulate a range of motors from the six common industry frame sizes. These are styles 11, 14, 17, 23, 34 and 42. Style 17 motors can be obtained from sources such as old 5.25 inch (133.35 mm) floppy disc drives and will deliver only small torque. At the other end of the scale, NEMA style 42 motors (4.2 inches or 106 mm diameter) from industrial machinery are real monsters with huge torque. Typically such motors will exhibit stepping speeds not exceeding 400 – 600 steps per second from a scratch start. Using a stepping speed beyond this limit will simply result in the rotor randomly vibrating back and forth around a central position as the magnetic forces are insufficient to bring the rotor up to speed within a single step. This limit can be exceeded by 'ramping up' the stepping speed from zero, which will cause the rotor to remain in lock with the rapidly increasing field rotation. Note however that this driving technique demands electronics with considerable intelligence (and cost). The simpler forms of drive described later in this article are limited to speeds of less than the cold start speed. But also note that if the magnetic forces are large enough to get the rotor up to speed in just one step, then it can also stop within one step. This in turn means that if the motor speed is ramped up to beyond the cold start speed, then it also must be ramped down in order to predict where it will stop, resulting in complex control software and hardware which must 'look ahead'.

All stepper motors lose torque rapidly as the speed of rotation increases. This is due to the fact that their field windings possess inductance as well as resistance. Current in a series LR circuit- and the magnetic field associated with it- takes time to build up and it is this which limits the maximum motor speed.

Windings

There are many ways of winding the field coils in a motor, but commonly available units use either two or four coils and this article will only deal with these types. Motors with five, six, eight and more field coils are obtainable and all that is necessary to get these working is to remember that the magnetic field must step around the field poles in a circular fashion. This is easy to do once the three methods of driving four pole motors are understood.

Figure 3 shows how connections can be made to motors with two or four field coils. As is shown in the demonstration motor diagrams, again refer to Figure 1, the user can elect to energise just one, or two adjacent field coils at any one time. Energising one coil at a time in a circular manner is called wave drive and this is little used. Energizing two adjacent coils in a circular fashion is called two phase drive and this latter technique doubles the magnetic force acting on the rotor and hence,

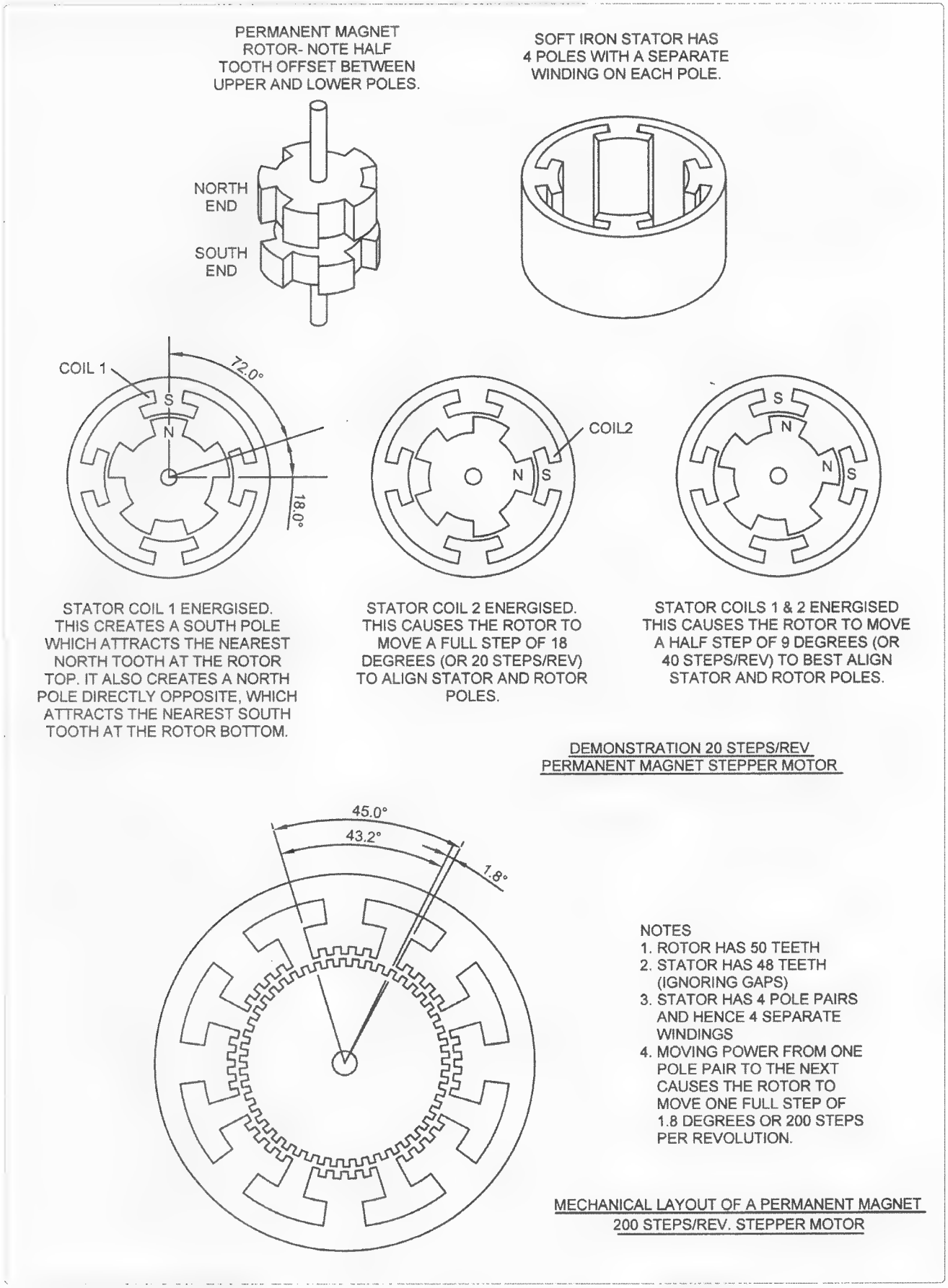

PERMANENT MAGNET ROTOR- NOTE HALF TOOTH OFFSET BETWEEN UPPER AND LOWER POLES.
NORTH END
SOUTH END
SOFT IRON STATOR HAS 4 POLES WITH A SEPARATE WINDING ON EACH POLE.
COIL 1
72.0°
18.0°
S
N
COIL2
STATOR COIL 1 ENERGISED. THIS CREATES A SOUTH POLE WHICH ATTRACTS THE NEAREST NORTH TOOTH AT THE ROTOR TOP. IT ALSO CREATES A NORTH POLE DIRECTLY OPPOSITE, WHICH ATTRACTS THE NEAREST SOUTH TOOTH AT THE ROTOR BOTTOM.
STATOR COIL 2 ENERGISED. THIS CAUSES THE ROTOR TO MOVE A FULL STEP OF 18 DEGREES (OR 20 STEPS/REV) TO ALIGN STATOR AND ROTOR POLES.
STATOR COILS 1 & 2 ENERGISED THIS CAUSES THE ROTOR TO MOVE A HALF STEP OF 9 DEGREES (OR 40 STEPS/REV) TO BEST ALIGN STATOR AND ROTOR POLES.
DEMONSTRATION 20 STEPS/REV PERMANENT MAGNET STEPPER MOTOR
45.0°
43.2°
1.8°
NOTES
1. ROTOR HAS 50 TEETH
2. STATOR HAS 48 TEETH (IGNORING GAPS)
3. STATOR HAS 4 POLE PAIRS AND HENCE 4 SEPARATE WINDINGS
4. MOVING POWER FROM ONE POLE PAIR TO THE NEXT CAUSES THE ROTOR TO MOVE ONE FULL STEP OF 1.8 DEGREES OR 200 STEPS PER REVOLUTION.
MECHANICAL LAYOUT OF A PERMANENT MAGNET 200 STEPS/REV. STEPPER MOTOR

Figure 1: Demonstration 20 steps/rev permanent magnet stepper motor.

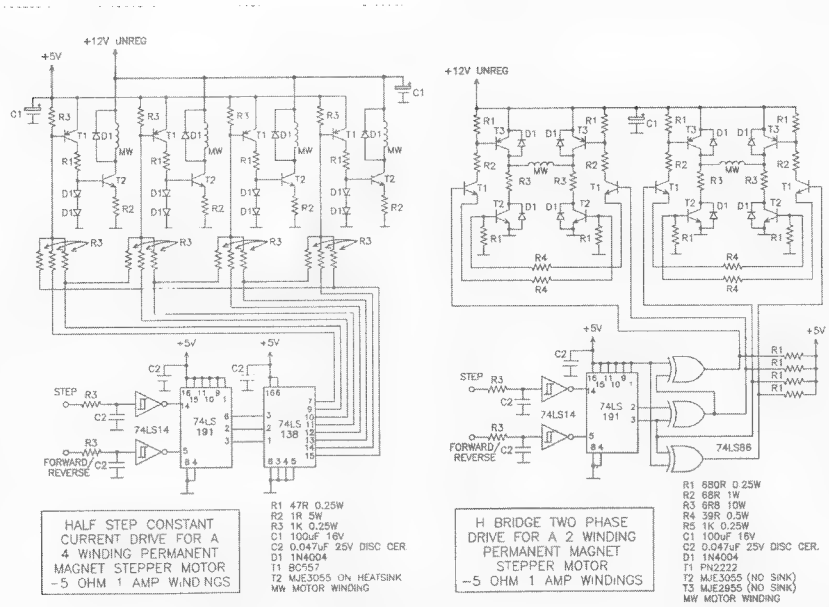

+12V UNREG
+5V
HALF STEP CONSTANT CURRENT DRIVE FOR A 4 WINDING PERMANENT MAGNET STEPPER MOTOR –5 OHM 1 AMP WINDINGS
R1 47R 0.25W
R2 1R 5W
R3 1K 0.25W
C1 100uF 16V
C2 0.047uF 25V DISC CER
D1 1N4004
T1 BC557
T2 MJE3055 ON HEATSINK
MW MOTOR WINDING
H BRIDGE TWO PHASE DRIVE FOR A 2 WINDING PERMANENT MAGNET STEPPER MOTOR –5 OHM 1 AMP WINDINGS
R1 680R 0.25W
R2 68R 1W
R3 6R8 10W
R4 39R 0.5W
R5 1K 0.25W
C1 100uF 16V
C2 0.047uF 25V DISC CER.
D1 1N4004
T1 PN2222
T2 MJE3055 (NO SINK)
T3 MJE2955 (NO SINK)
MW MOTOR WINDING

Figure 2: Common lead configurations for stepper motors.

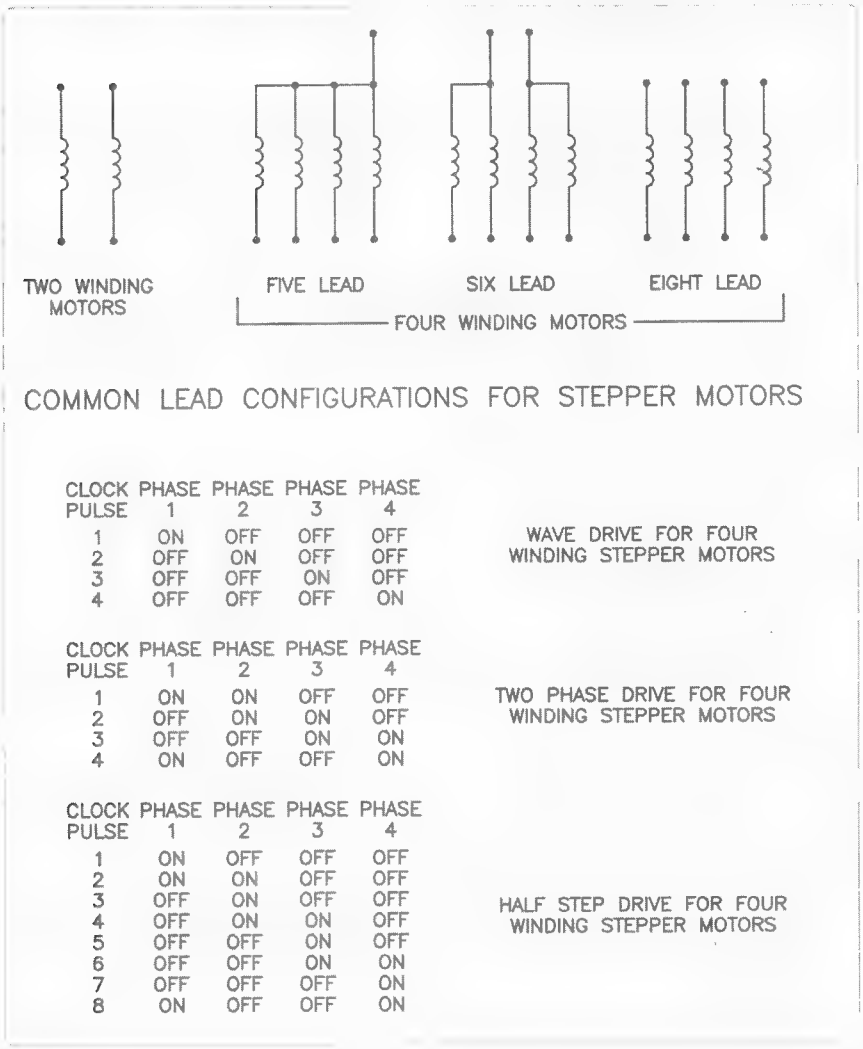

TWO WINDING MOTORS
FIVE LEAD
SIX LEAD
EIGHT LEAD
FOUR WINDING MOTORS
COMMON LEAD CONFIGURATIONS FOR STEPPER MOTORS
CLOCK PULSE | PHASE 1 | PHASE 2 | PHASE 3 | PHASE 4
1 ON OFF OFF OFF
2 OFF ON OFF OFF
3 OFF OFF ON OFF
4 OFF OFF OFF ON
WAVE DRIVE FOR FOUR WINDING STEPPER MOTORS
CLOCK PULSE | PHASE 1 | PHASE 2 | PHASE 3 | PHASE 4
1 ON ON OFF OFF
2 OFF ON ON OFF
3 OFF OFF ON ON
4 ON OFF OFF ON
TWO PHASE DRIVE FOR FOUR WINDING STEPPER MOTORS
CLOCK PULSE | PHASE 1 | PHASE 2 | PHASE 3 | PHASE 4
1 ON OFF OFF OFF
2 ON ON OFF OFF
3 OFF ON OFF OFF
4 OFF ON ON OFF
5 OFF OFF ON OFF
6 OFF OFF ON ON
7 OFF OFF OFF ON
8 ON OFF OFF ON
HALF STEP DRIVE FOR FOUR WINDING STEPPER MOTORS

Figure 3: Showing half step and H bridge motor drives.

relative to wave drive, doubles motor torque available. Half step drive, refer Figure 2, where first one coil is turned on and then two coils etc only allows the motor to produce the same torque as wave drive but doubles the number of steps per revolution.

There is also a drive technique called microstepping where the power to one field coil is steadily decreased in digital steps while the power to the next field coil is ramped up in digital steps. This results in a number of intermediate rotor positions in between two adjacent field coil poles. Microstepping gives smoother motor operation but considerably increases the complexity of the driver electronics. Reference should be made to the internet if the reader wishes to go down this path.

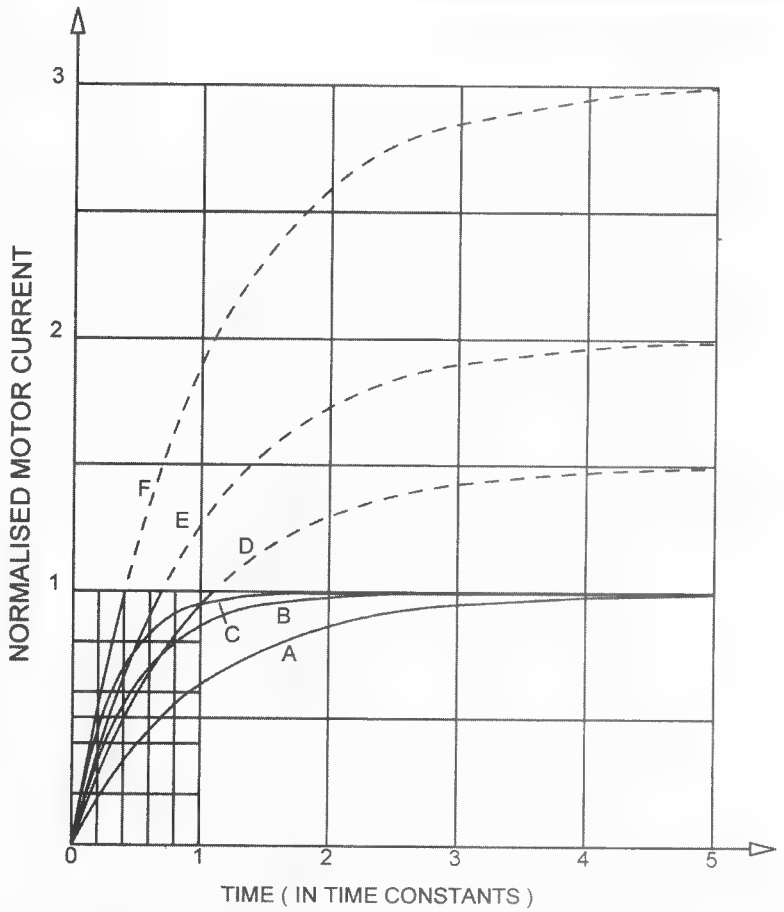
Drives

And now we get to the ugly nitty gritty. As mentioned earlier, all field coils have inductance and resistance, and it is the inductive component which gives us the headaches. This reactive component limits the rate at which current (and hence magnetic field) will build up when a particular DC voltage is applied across a field winding. It is the resistance of the winding which ultimately determines how much current will flow, and the mathematics tells us that to establish this final current five time constants of time (5L/R) must elapse. This idea defines the simplest drive possible where a series transistor is used to switch power to a field winding on and off. It is a relatively slow technique and the motor loses torque when there is insufficient time for the field current to build up to maximum. This technique and all of the other driving techniques are shown in Figure 4.

If we wish to speed the motor up, we must somehow reduce the time taken for the current to build up and the simplest way to do this is to increase the total resistance of the winding. If we add a series resistor of the same value as the winding resistance, then the time constant halves (L/2R) and we can then double the maximum motor speed.

Of course when we do this we will also have to double the supply voltage to the motor in order to attain the same final current, and so the price for this increase in operating speed is extra wasted power, in the form of heat in the series resistor. But this drive form still has the advantage of being very simple. With a five volt NEMA style 23 motor (serious torque) the driver transistor for each field winding will have to pass typically around one amp. So the collector dissipation for each driver transistor (which is either off or saturated) is about one amp times a collector emitter voltage of, say, 50 millivolts, or 50 milliwatts, and so no heatsinks are required. To put this in perspective a BC548 can safely dissipate 300 milliwatts, but will not pass currents of one amp.

If we wish to speed the motor up even further, then our final port of call is a constant current drive. Here we significantly increase the supply rail to the motor so that the current builds up very quickly along the exponential path to its final level, and then stop its growth at a safe level with a constant current source (say one amp in the example of the NEMA 23 just mentioned). There are standard driver chips around which will supply up to 36 volts to a five volt motor winding in order to get this rapid growth in current, and overdrive factors of three to five are very common. In fact overdrives of 50 are sometimes used (250 volt DC supply to a five volt motor!) in military applications to get the absolute best available speed from a motor. Of course once again the price for all this is waste heat and this time the waste heat will be generated in the driver transistors which cannot be operated in the saturated mode, but instead must operate under linear conditions. If we were to operate the five volt NEMA 23 motor above from, say, a 25 volt DC supply, then when the final winding current of one amp is reached, there will be a five volt DC drop across the field winding and about 20 volts of DC from collector to emitter of the driver transistor. With a winding current of one amp this means that the collector dissipation of each driver transistor is 20 watts, and so large heatsinks will be needed to dissipate the 40 watts of waste heat created in a two phase motor drive circuit.



A- BASIC MOTOR, WITH EACH WINDING OF INDUCTANCE L AND RESISTANCE R, RUNNING AT ITS RATED VOLTAGE.
B- SAME MOTOR, BUT WITH A SERIES RESISTANCE R ADDED TO EACH WINDING, RUNNING FROM A SUPPLY OF 200% OF MOTOR RATINGS.
C- SAME MOTOR, BUT WITH A SERIES RESISTANCE 2R ADDED TO EACH WINDING, RUNNING FROM A SUPPLY OF 300% OF MOTOR RATINGS.
D- SAME MOTOR, DRIVEN BY CONSTANT CURRENT SOURCES WHICH WILL ONLY ALLOW NORMAL WINDING CURRENTS TO FLOW, AND RUNNING FROM A SUPPLY OF 150% OF MOTOR RATINGS.
E- AS FOR D, BUT WITH A SUPPLY OF 200% OF MOTOR RATINGS.
F- AS FOR D, BUT WITH A SUPPLY OF 300% OF MOTOR RATINGS.

Figure 4: How motor maximum speed varies with different methods of driving the motor field coils.

As a final comment, there is a form of drive called a chopper drive. Chopper drives are very efficient at low motor speeds as they use a high supply voltage to allow fast current build up in the field windings. Once the maximum winding current has been reached and the rotor has been dragged into final position, the drive circuit goes into a switching mode to deliver very low average current to the winding. But, when the motor is flat out, this driving technique is no more efficient than the much simpler constant current drive and under these conditions has the same heat problems.

Other Comments

There is one other thing of which users of stepper motors should be aware, and this is that the rotor of every stepper ever made has its own natural frequency of resonance. This comes about because the rotor has mass and its position is determined by an elastic magnetic force. So when the rotor is abruptly moved

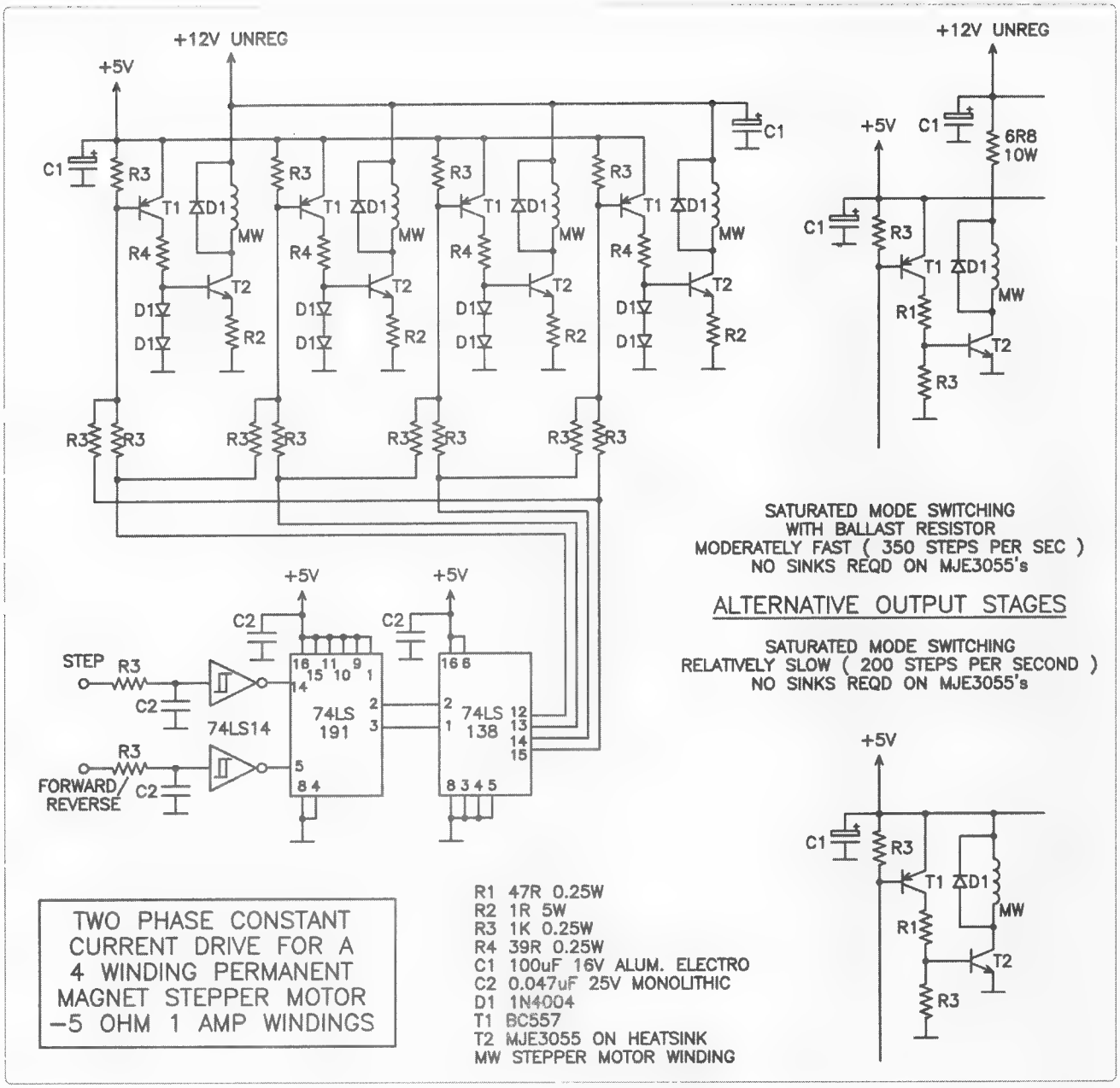


Figure 5: Three methods of driving motors with four field coils.

to a new position by switching field coils on and off, it will vibrate about its new position for a while until the kinetic energy of movement is dissipated in losses and the lines of magnetic force bring it to final position. If the frequency of pole changing happens to approximate this natural resonance then the rotor of the motor will cease stepping in an orderly fashion and take great uncontrollable positional leaps back and forth while emitting a lot of noise. From a user's viewpoint, there is little which can be done about this, apart from avoiding this frequency entirely and/or adding some losses to damp the resonance somewhat (a gear box full of thick grease?). One of the great advantages of ramping the motor speed up and down is that this region of resonance can be passed through quickly before rotor oscillations build up sufficiently to cause loss of position. Microstepping greatly reduces resonance problems because the rotor is gently moved using a large number of small steps rather than pulled into position in one great square wave leap.

Drive Circuits

A number of drive circuits are shown which can be directly connected to the parallel output port of a computer and which illustrate the various ways a motor can be driven. Long unshielded connections between computer and driver electronics can be used because all driver inputs feature a CR low pass filter to remove RFI and noise. The rounded off waveforms which result from this filtering are squared again up with a 74LS14 Schmitt trigger stage and applied to the direction and clock

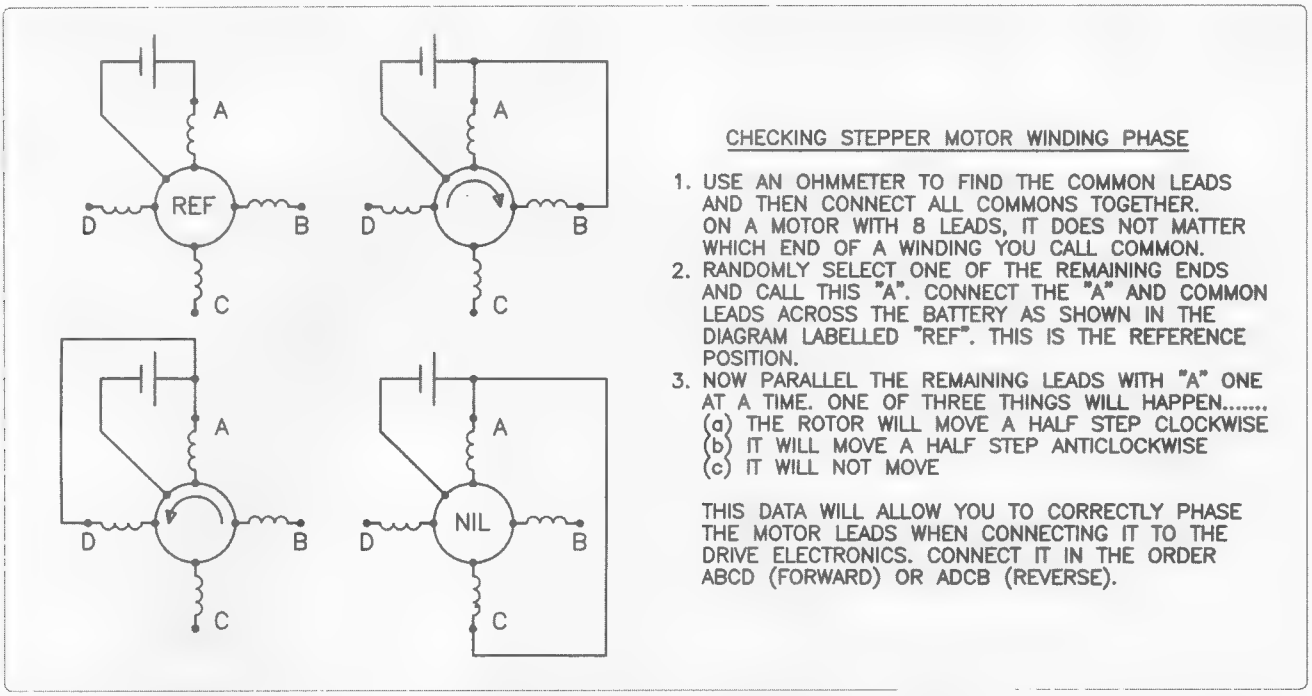

A
REF
D
B
C
A
D
B
C
A
D
B
C
A
NIL
D
B
C
CHECKING STEPPER MOTOR WINDING PHASE
1. USE AN OHMMETER TO FIND THE COMMON LEADS AND THEN CONNECT ALL COMMONS TOGETHER. ON A MOTOR WITH 8 LEADS, IT DOES NOT MATTER WHICH END OF A WINDING YOU CALL COMMON.
2. RANDOMLY SELECT ONE OF THE REMAINING ENDS AND CALL THIS "A". CONNECT THE "A" AND COMMON LEADS ACROSS THE BATTERY AS SHOWN IN THE DIAGRAM LABELLED "REF". THIS IS THE REFERENCE POSITION.
3. NOW PARALLEL THE REMAINING LEADS WITH "A" ONE AT A TIME. ONE OF THREE THINGS WILL HAPPEN.....
(a) THE ROTOR WILL MOVE A HALF STEP CLOCKWISE
(b) IT WILL MOVE A HALF STEP ANTICLOCKWISE
(c) IT WILL NOT MOVE
THIS DATA WILL ALLOW YOU TO CORRECTLY PHASE THE MOTOR LEADS WHEN CONNECTING IT TO THE DRIVE ELECTRONICS. CONNECT IT IN THE ORDER ABCD (FORWARD) OR ADCB (REVERSE).

Figure 6: How to practically determine the field winding phasing of an unknown motor.

inputs of a 74LS191 reversible four stage binary counter. For motors with four field windings, the least significant two bits (or three bits for half stepping) of this counter are then decoded by a 74LS138 to give a one of four drive to the following motor winding driver stages (or one of eight for half step). Each winding driver circuit is OR connected to these 74LS138 output lines using 1K resistors so that either wave drive, two phase drive or half step drive can be obtained. Finally output stages are detailed for each of the three different ways of driving a motor winding. Refer Figure 5.

For two winding motors, an H bridge circuit is detailed. This uses the same input and counter structure as the other circuits but a 74LS86 (exclusive OR) is used to decode the two least significant bits of the counter and drive the output stages.

Scaling these circuits up or down for different motors is relatively simple once the basic operation is understood. For very large motors it is probably best to either go for the simple saturated driver type, or go directly to the expensive but high performance chopper drives. Chipsets such as the ST Microelectronics L297/298 and National Semiconductors LMD18245T are good examples of this drive type.

There is plenty of proprietary low cost software around on the 'net for NC machine control. Interfacing to this software may require the inclusion of another 74LS14 inverter in both the clock and/or direction lines of the 74LS191 counter. Using these motors is a lot of fun, and when you have finally developed a computer controlled system to push an aerial or a high powered woodworking router around, you really have achieved something that very few can do.

Figure 6 shows a method of determining the relationship of the windings of an unknown stepper motor so that it may be correctly driven.

Now go turn the world.....

WIRELESS INSTITUTE OF AUSTRALIA
WIA Annual Conference
Darwin, 27th – 29th May, 2011
We strongly recommend that you book your accommodation early to avoid disappointment!

Murphy's emergency communications

Bill Isdale VK4IS

Photo 1: The digital modem.

Heat is a major stressor of electronics, as well as of people, and a hot day delivered a PC that would not start.

Troubleshooting involved completely disassembling the device down to a bare motherboard and removing the dust with electronics cleaner. Under the heat sink and integral fan the heat conducting paste between the CPU and its cooler was sparse and dry. New paste and reassembly put this in order and that's when I found the actual problem, lint in the mini switch that turns the computer on. It was as simple as that and easily fixed, once discovered after a couple of hours.

Interestingly, now clean and with new heat conductive paste to help keep the CPU cool, the monitoring software showed that the CPU and motherboard ran at the same temperatures as before.

However, I had no doubt been eating into the safety margin before and now the cooling would be able to cope more easily with high temperatures.

We all know that these pastes dry out and that computers are dust magnets, but how often do we maintain their internals? One consideration is that opening it up carries the risk of creating a problem. Contemporary computers are shrinking and many people use notebook size machines that don't lend themselves to being opened and which struggle with heat dissipation at the best of times. The hardware in computers is designed to protect itself and at a certain temperature will abruptly shut down, without warning or explanation, until it is cool enough to be restarted.

If you are trying to use a computer and it shuts down without warning because it is overheating, futile troubleshooting could result in a computer unnecessarily in pieces while the reason for its behaviour is never discovered.

This brought to mind an article by Jim Linton VK3PC in *AR* of April 2009, commencing on page 27. In it he described the impressive achievements of the Red Cross Emergency Communications volunteers (RECOM). The article reminded us that bush fires will typically happen in very hot weather and themselves create severe heat. In that environment the laptop computers which are used for HF digital modes may become unreliable unless means are found to keep them as cool as possible. The heat can cause erratic behaviour or failure. In the stressful circumstances of an emergency, this could have unacceptable consequences.

This worked around in my mind like grit. The emergency communications that we offer to help our communities have to be reliable or we are wasting everyone's time, including our own, and potentially becoming part of the problem rather than the solution.

Also in mind was something recently heard from a professional in aviation communications. When things go wrong the pilots of modern airliners, equipped with the latest satellite data terminals, go straight to the radio and make a voice call, on VHF where there is coverage and HF sideband anywhere else. A Pan or Mayday message can go out very quickly and no doubt their hands are going to be fully occupied without trying to use a keyboard.

The take away message, for me, was that emergency communication using HF digital modes, while making it possible to get through when the wider bandwidth required for voice may be full of noise, are only one string to the bow. People need and want to have voice communication when things go very bad. The usefulness of digital messaging also needs to be considered in the light of the associated complexity.

I decided on an experiment. Drawing on the success of digital modes as demonstrated by our Red Cross colleagues and taking into account that in an emergency simplicity and reliability will be of great value, I set as a minimum that emergency radio equipment must be able to deliver voice communication in addition to a digital mode (1). This is fortunately easy to achieve as the radios we are typically using will

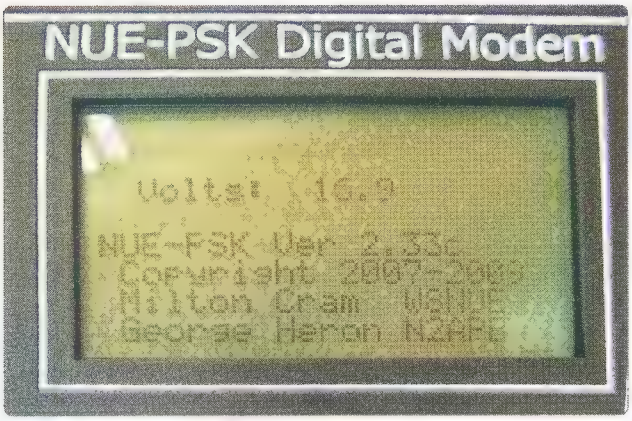


Photo 2: The start-up screen showing supply voltage.

be able to support voice communications. To provide a wide range of modes and very large choice of operating frequencies I chose the Yaesu FT-857D (2). There are other alternatives and people will have their own favourites.

Expecting to have to be able to operate in a hot environment, I replaced the standard reference oscillator with the optional temperature compensated crystal oscillator (TCXO-9) which provides frequency stability to within half a part per million despite varying temperatures. In order to make this modification it was only necessary to replace a small press-fit board, following the simple and clear instructions in the manual. A Phillips screwdriver was the only tool required and the whole operation took less than five minutes. This probably wasn't really necessary but will be useful when using digital modes so that the transmit and receive frequencies will not drift, particularly during extended use in high ambient temperatures. Digital modes also involve high duty cycles which will heat up the rig. It is easy to forget when running 100 watts output on SSB that this is only the peak power and that the average will be much lower. A digital mode transmission is emitted at the selected output level the whole time the rig is transmitting. The same radio, set to 25 watts, will heat up a lot more than when set for 100 on SSB. Fortunately, 25 watts should be plenty for a digital transmission.

Some experimentation convinced me that the stock Murata brand ceramic filter, located at the 455 kHz second IF and about 2.3 kHz wide, which is used for transmitting and receiving on SSB, performed well. However, the optional Collins 2.3 kHz mechanical filter reduced the noise on receive and seemed to make voice frequencies more prominent to my ears. The specifications indicate 2 dB less loss than the stock filter as well as steeper skirts. This option was as easily fitted as the high stability oscillator and the radio allows the operator to switch between the stock filter, which remains in place, and the additional filter. It is possible to transmit through one and receive through the other, reverse their roles, or to transmit and receive through the accessory filter. On air testing, particularly receiving through one and then the other, which can be changed in a second from the rig's controls, convinced me to use the Collins filter for transmitting and receiving.

To be prepared, wonderful phrase that, I chose an external bhi brand noise cancelling speaker and

Refit Your Workbench

Switchmode Laboratory Power Supplies

Compact size, high current, variable output and fan cooling make these the ideal power supply for your bench. They are protected against thermal overload and short circuit and will display a warning LED in the event of a fault condition. Current and voltage are displayed on separate backlit analogue meters. Two models available:

Common Specifications:
Ripple: <9mV at rated load, Output regulation: <1%
Dimensions: 148(W) x 162(D) x 62(H)mm

0 - 24VDC
• Current output: Max 18A, 15A continuous
MP-3800 $149.00

MP-3800

0 - 16VDC
• Current output: Max 30A, 25A continuous
MP-3802 $199.00

FROM $149.00

Micro Engraver new

The diamond coated tip spins at 10,000 RPM. Personalise tools, equipment and security ID on valuables etc. Engraves glass, ceramics, metals and plastics. Batteries and case included.
Tip is replaceable.

• Size: 160(L) x 15(Dia)mm TD-2468

Replacement tip sold separately TD-2469 $6.95

$19.95

Electronic Tool Kit

An excellent tool kit for electronic or fiddly repairs with all the essentials - cutters, pliers, screwdrivers, nut drivers etc. See website for full contents.

new

Case size: 210(L) x 140(W) x 38(D)mm

$29.95

TD-2107

60W ESD Safe Solder/Desolder Rework Station

Complete solder & desolder station for production and service use. The temperature is easily adjusted in 1° increments with simple up/down buttons and the soldering/rework functions can be operated independently.

• ESD safe & suitsable for lead-free solder
• Celsius and Fahrenheit display
• Two backlit LCDs
• 60W slim, light weight pencil
• Temp range: 160 - 480°C
• Hot air blower, 320W & 3 nozzles includes

TS-1574

$369.00

Soldering Accessories

Deluxe GOOT Desoldering Tool
This is a high quality GOOT brand desoldering tool. It features Japanese build quality and a large vacuum chamber for extremely strong suction.

• Length 330mm

$27.95

TH-1856

Solder Fume Extractor
Designed to remove dangerous solder fumes from the workbench or work area, ideal for the enthusiast. It incorporates a ball bearing high volume fan to maximise airflow which is directed upwards at the rear of the unit to aid in safe dispersion of fumes. ESD safe.

$69.95

TS-1580

For your nearest store log onto our website www.jaycar.com.au or call 1800 022 888

To order call 1800 022 888
www.jaycar.com.au

Jaycar

headphones to connect to it. This audio frequency DSP device has been found to reduce noise beyond what the radio itself is capable of doing and the headphones help to exclude distractions at the operating position.

With the fall back position established, it was time to select a digital mode. The choice made was PSK31 as it is a well established and robust mode with which a good number of us have some experience (3). It can be used to produce readable copy from well below the noise floor. There are many other modes which could be examined in detail as to their suitability but this choice allowed a start to be made and could be changed later if necessary.

The next step was getting the PSK31 into the radio. A suitable socket is provided on the FT-857D for data and to key the transmitter. An interface box is needed to link the radio to the computer which both generates and decodes the digital information. The computer is effectively a modem sending to the transmitter the tones which it generates from the text typed in and decoding back to text the tones heard by the receiver.

Which brings us to the general purpose digital computer, which, with the right software, becomes the modem.

We all know just how reliable these things aren't, particularly if they are sometimes connected to the internet. The choice of hardware, operating system and digital mode software is immense and the makers of all of it are conscious of the potential incompatibilities and sensibly issue warnings such as the one that came with my new laptop; that it was not intended for use in the navigation of aircraft or operation of nuclear facilities.

In addition, the software we have available for digital modes is almost inevitably written by a skilled and well intentioned hobbyist who could not reasonably be expected to provide a perfect product. It is usually free, supported sporadically if at all and may have unknown

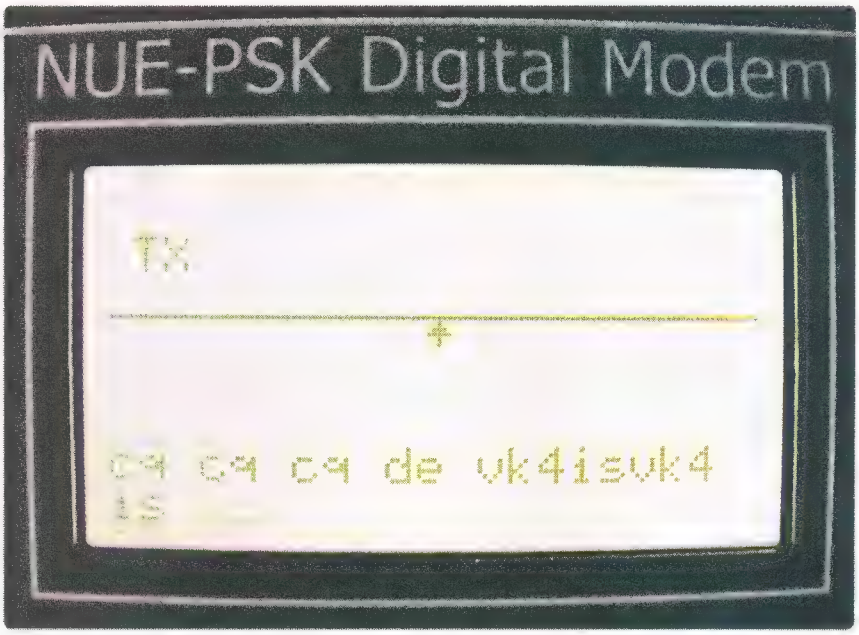


Photo 3: Just press F1 to send your chosen macro.

interactions with some of the huge range of hardware and software it may encounter.

Since updating of the operating system and other software installed on a computer may take place automatically when connected to the internet, a device used for emergency communications should be tested ahead of time to limit the scope for nasty surprises when it needs to be used.

It is too risky to turn up in an emergency with a computer that develops a mysterious problem which may make it useless. The alternative of keeping computers for this purpose only is expensive and in reality the batteries of a rarely used computer will most likely have deteriorated by the time they are needed.

The computer is the weak link. It may not work when required,

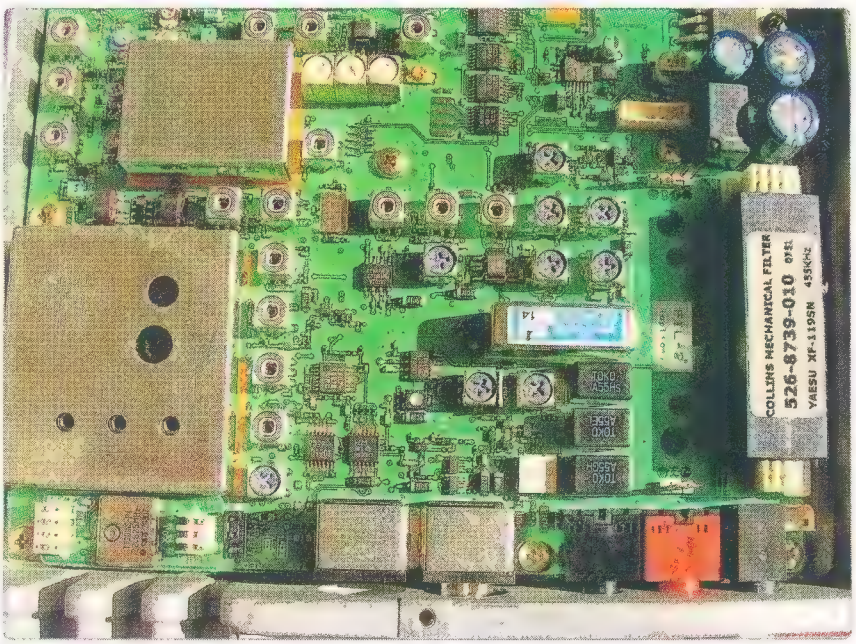


Photo 4: TCXO-9 at bottom left, Collins filter vertically at the right and stock Murata filter horizontally and upside down in this view.

may not tolerate extremes of heat and is likely to be fragile. It is also expensive and has significant power requirements.

A transceiver is engineered to carry out a relatively small range of tasks which it does very well. A computer is a much more generic device, designed to be adapted to many purposes, which is its strength as a commercial product. That versatility introduces complexity which may work against us. A more minimalist approach which reduces size, weight and power consumption may be more suitable for present purposes.

My interface box requires power, connection to the microphone and speaker sockets on the computer, a serial cable from the computer to key the transmitter and a connection to the control socket on the rig (4). Since modern portable computers are likely to be without a serial port, a USB adaptor, with a suitable software driver, may also be required. This is a real rats nest of wires with potential for a faulty connection at many points. A dedicated modem would have no need of an interface to a computer any more than it needs a computer.

This brings me to the Nue-PSK, a small and ingenious device designed by two highly qualified US radio amateurs, Milt Cram W8NUE and George Heron N2APB, for operating digital modes from portable stations. Its circuit diagram and list of components is published on the internet at www.nue-psk.com and it is sold as a kit or fully built. There are also a number of options available for it.

At present it supports PSK31 and RTTY, with more capabilities in development. It will run on an external power supply or a battery pack, drawing less than 100 mA, which is a tiny power requirement compared to a laptop. Two nine volt alkaline batteries, connected in series to deliver 18 volts, should give about four hours of operating time. Its small monochrome screen is easy to read in bright light and it requires only a single cable to the radio and a PS2 keyboard to operate.

I ordered a constructed unit with the optional USB connector to allow easy updating of the firmware which will change as new capabilities are developed. For convenience, I also ordered a printed version of the manual and two external battery packs. One for nine volt batteries and another for AA cells. It will run on 18 or 12 volts, with reduced current drain at higher voltages.

The operation of the device is well described on the maker's website and there are links to articles written about it. It offers compactness, low power consumption and the relative efficiency that results from it being designed to perform its limited tasks, just the ones we want for readily deployable emergency communications.

Early experience has been encouraging in that a well built unit was promptly delivered. It is easily powered up and put to work; so easily in fact that one can't help noticing how simple it is compared to using a computer and an interface. A cursor is moved, either by a rotary knob or the arrow keys of the keyboard, to the displayed signal you wish to have demodulated. Once near it, the software locks on to the signal automatically and the text is displayed. Pressing F10 allows the transmitter to be toggled from transmit to receive. The text is sent as it is being typed and there is provision for macros to facilitate sending often used information. The unit is light and compact and housed in a strong aluminium box. Significantly, it cost about $350 Australian fully built and optioned up with all the accessories that I thought I would need. This is about a third of the cost of an average portable computer and interface. It is easy to spend less as the website offers different levels of kit to those who would prefer to build it themselves.

The unit is easily transported, the batteries are readily available, inexpensive and quickly replaced. The firmware can be easily updated as new capabilities are introduced so all operators are able to have consistent equipment.

COM-AN-TENA

Australian made antennas setting a new standard

10/11 5/8 vert 60 mm base H/D	$225
Tri-band 5 elem 10 15 20 m	$860
Log-periodic 9 elem 8.5 m 1 boom	$1130
20 m 3 elem beam 4.9 m 1 boom	$494
Log-periodic 10-30 8 elem 10 m 1 boom	$1245
2 x 5/8 co-linear 2 m vertical	$135
Mb vert auto switch 10-80 m	$360
40 m lin load 2 elem/cap hats	$670
6 m 5 elem 3.6 m 1 boom	$270
23 cm 36 elem 2 m 1 boom n-con	$249
70 cm high gain Yagi 3 m boom	$170
21.4 m mast aluminium s/steel	$4500
13.5 m 1 mast aluminium s/steel	$3275
9.5 free standing as above	$1250

Guyed masts
13 or 21 metres

Winch up, tilt-over, aluminium and stainless steel three sided construction. Auto brake winches.

115 John Street
Glenroy VIC 3046

Phone
0419 542 437
or send SMS

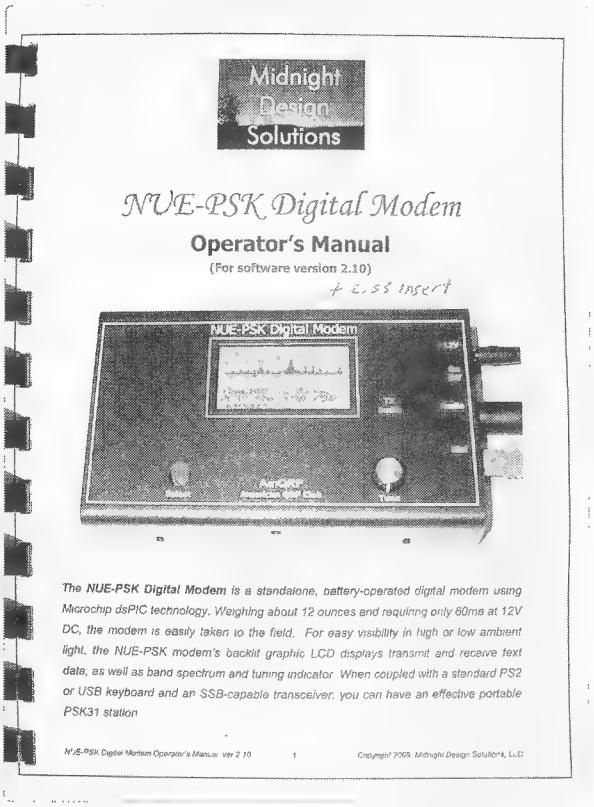
The use of a digital mode raises for consideration whether there would be any benefit in installing a very narrow filter for that purpose. On the transmitting side, it is desirable to use the widest filter so as to reduce restriction on the outgoing signal. A narrow filter, such as might be used for CW, could go in the receive chain to exclude the maximum noise. For my radio a 300 or 500 Hz filter is available, as well as a spare slot in which it could be installed. At present I have elected to use the 2.3 kHz filter, clearly intended for SSB, and to allow the DSP in the modem to sort out what is in the pass band. The advantage is that it is designed to receive a 2.5 kHz bandwidth and to display any signals within it. Introducing a very narrow filter, while perhaps useful when contesting, does not seem, at least initially, to be necessary as the modem will only demodulate the selected signal. Another consideration against a very narrow filter, particularly the 300 Hz version, is that different radios may have different ideas about when they are on a certain frequency. Couple that with drift of only two parts per million and it might become unnecessarily hard to find the transmission being sought. An analogy is trying to find a star in a telescope; it can be hard to find the Moon. Incredibly weak signals or extremely strong nearby signals might make it necessary to revisit this decision (5).

The remaining considerations for easily deployable communications are power for the radio and suitable feed lines and antennas.

While fuel cells are obtainable and high energy density batteries derived from those developed for portable computers and mobile phones are available, cost and the need to match the voltage we require for radio gear has led me to stay with sealed conventional batteries and a charger to maintain them. Although heavy and bulky, they are a reliable item.

With a radio as versatile as those available to us these days, we can take advantage of the capability of operating on different bands as conditions require (6). Readily deployable antennas may range from a doublet with balanced feed line able to be used on many bands with an antenna tuner to a tapped whip on a vehicle. In practice, co-axial cable is more likely to be adaptable enough to run to where an antenna can be hung. A supply of spare antennas and feed line can easily be carried along with some light cord and the means to get a line over something like a tree branch to haul the antenna up.

It is worth keeping in mind that it may be necessary to deploy quickly and to be able to pull out and move in a hurry so anything that is set up should lend itself to rapid redeployment. The vehicle's battery needs to be kept fully charged to make sure it can start so dedicated power for the radio gear should be provided.


Midnight Design Solutions
NUE-PSK Digital Modem
Operator's Manual
(For software version 2.10)
+ 2.55 insert
NUE-PSK Digital Modem
The NUE-PSK Digital Modem is a standalone, battery-operated digital modem using Microchip dsPIC technology. Weighing about 12 ounces and requiring only 60ma at 12V DC, the modem is easily taken to the field. For easy visibility in high or low ambient light, the NUE-PSK modem's backlit graphic LCD displays transmit and receive text data, as well as band spectrum and tuning indicator. When coupled with a standard PS2 or USB keyboard and an SSB-capable transceiver, you can have an effective portable PSK31 station
NUE-PSK Digital Modem Operator's Manual ver 2.10 1 Copyright 2009, Midnight Design Solutions, LLC
Photo 5: The well written manual.

We have seen volunteers such as our colleagues with the Red Cross make a valuable contribution to the community in times of need. As they have demonstrated, proper preparation is essential if we are to be part of the solution and not become another problem for those we are intending to help.

The development of the dedicated digital communications modem with its simplicity and robustness may help us to increase our reliability by decreasing complexity. Offering voice communications in addition will give us another string to our bow, never a bad idea.

With the equipment generally available at present, providing secure data communications would require the reintroduction of computers into the processing loop. The solution I have sketched has favoured simplicity and inherently increased reliability and accepts the trade-off of reduced security, which I suggest is an acceptable compromise to make for most communication needs in an emergency.

Endnotes

1. See, for example, the photos of operators in emergency situations in *AR*, September, 2008, p.23 and *AR*, March, 2010, p.26.
2. Reviewed in QST, August, 2003, p.63 and in *AR* June, 2005, p.22.
3. PSK31 is described in the Radio Communication Handbook, 10th edition. RSGB at 20.8
4. A sound card interface is described in *AR*, September, 2004, p.14.
5. The signal reporting system for digital modes is described in *AR*, August, 2004, p.6.
6. The Icom IC-7600 will operate PSK and RTTY, needing only a keyboard plugged in to it. Reviews may be found in *AR*, November, 2009, p.22 and in RadCom, June, 2009, p.19.

Western Victoria JOTA/JOTI weekend

Ash Clark VK3SSB

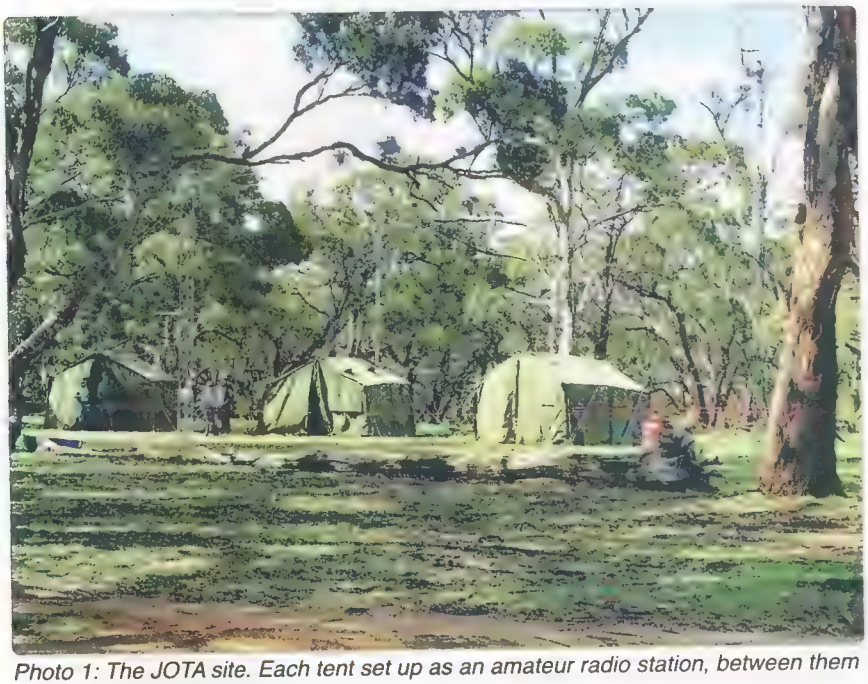


Photo 1: The JOTA site. Each tent set up as an amateur radio station, between them covering all HF/VHF/UHF bands.

Close to 100 Scouts and Leaders gathered at the Cooinda Burrong Scout Camp in western Victoria for the JOTA/JOTI weekend. Scouts set up their own 'Standing Camp' and worked as patrols to enjoy the exciting range of communication type activities run over the weekend. Together with a total of 11 amateur radio operators on site for the weekend, nine of them being Scouts and two from the local Wimmera Amateur Radio Group radio club, another fantastic event was run.

Scout groups arrived on the Friday evening to set up their campsite. For the first time in many years, it was wet and windy. This posed a challenge to everyone setting up and also had an effect on our numbers – this year being our lowest attendance in some years. Never-the-less, the weekend went on, and indeed we woke up to some sunshine on Saturday. With that the activities kicked off.

Activities ran in blocks of one hour where patrols learnt a variety of aspects of communication. These included foxhunting, building a Morse Code generator (Dick Smith kit), sending and receiving Morse Code, geocaching, orienteering using handheld radios to communicate back to base and even building a six metre free-standing radio mast in the bush to establish long range communications on UHF CB. The Scouts thoroughly enjoyed the spread of activities and by careful planning with a Scout Leader, the activities can go towards each Scout's badge work.

Photo 2: A mast built and erected by the Scouts for UHF CB communications back to base.

Photo3: Ash VK3SSB and the Horsham Scouts talking on 20 metres to a Scout group in Queensland.

Of course, the main part of the weekend was the JOTA/JOTI part, amateur radio and the internet. With the assistance of Telstra in providing superfast NextG internet, a local school for donating us around15 quality computers and also the great efforts put in by Matt VK2ADF to get it all running, we were able to provide a great JOTI setup for the Scouts. Using JOTI, Scouts made contact to other Scouts in every continent.

On the amateur radio side, we had a fantastic bunch of enthusiastic operators who demonstrated many modes of amateur radio to the Scouts. We provided voice communications from three different shacks – 20 m, 80 m and 40 m and a VHF/UHF/D-STAR shack. SSTV was run locally, sending a photo of each patrol back and forth through a local SSTV repeater. Most of the Scouts were fascinated to see this mode of transmission actually working! We also built a radio backpack using the frame of an old hiking pack. This had UHF CB communications plus an APRS setup for tracking. An APRS receiver was in place in the shack to show the Scouts where the backpack was and how APRS worked.

Equipment wise in the shacks we had two FT-857Ds, FT-897, IC-7000 and an IC-2200H. We had three towers up with a Yagi for 20 m/15 m/10 m, Yagi for 2 m and dipoles for 80 m and 40 m. All in all we had another great JOTA/JOTI weekend and the exciting thing is that already, our extremely enthusiastic team of Scout radio operators (with an average age of 17) are planning for next year's event. We were fortunate enough to recruit seven Scouts over the weekend, all interested in doing a Foundation course here in western Victoria next June with the Scout Radio and Electronics Service Unit, so next year will be even better with the extra helpers! In finishing, I would like to individually thank the operators who put in much hard work with putting this great show on: Matt VK2ADF, Nat VK3NAT, Aeden VK3FABA, Luke VK3FLBP, Matt VK3FMCH, Lance VK3FLWW, David VK3GP and Jamie VK3JME.

Photo 4: Venturer Chris, soon to be VK3FVAC, finding a contact for the Hamilton Scouts under the guidance of Luke VK3FLBP.

Photo 5: Venturer Matt, soon to be VK3FMAT, giving Hamilton Scout Leader Jess a few hot tips about using the radio.

Photo 6: L to R – Drew from Goroke and Emily from Horsham setting off to find the hidden 'fox' out in the bush.

Plan NOW for JOTA/JOTI 2011!

Contact your local **Scout** or **Guide** group.

Amateur radio, bush walking, photography and fishing in the central highlands of Tasmania

Brian Morgan VK7RR

Everyone who has amateur radio as a hobby almost certainly has one or more other hobbies. Some, such as golf, could hardly be thought of as a hobby which can compliment amateur radio. But a bit of creative thinking could conjure up a golf day with a fox hunt, I guess. Others readily lend themselves to mixing well with amateur radio, from model aeroplanes to car racing, to scouting and so on.

But the subject of this article is amateur radio, bush walking, photography and fishing in the central highlands of Tasmania. My interest in writing such an article stemmed from those published in QST magazine, detailing the walking, photographic and amateur radio activities of the authors. In the case of my wife Sue and myself, the one object which best allows us to share these various pursuits simultaneously, is the ubiquitous pocket dual band radio, the VX-1 by Yaesu.

Let me tell you a little about this radio, just in case you don't know. It is small, about half the size of a cigarette packet. It has a rubber duckie type antenna which is thin and as long as a middle finger. You can obtain a leatherette carry case which makes it semi waterproof. It has a rechargeable three volt battery, plus has an option for a normal AA battery to drive it via a small plug in module with inbuilt voltage converter. One battery will last for several days' fishing, and still have some zap left over. It is rugged. It is reliable. It can survive smoke damage. It is a dual bander, with extended receive. And last, but most important, it easily fits into the top pocket of a fly fishing vest and the antenna is not so large as to risk catching a recalcitrant fly line.

Photo 1: Shiraz time at Penstock Lagoon.

In 1983 I had been invited by the lease holders of the highest point of land in the area to build an amateur repeater for use in search and rescue activities. There was a catch to the offer as it also required me to assist in installing several commercial systems, by doing the tower climbing. But the downside was more than compensated by having free access to a desirable repeater location which I quickly found, during our surveys, provided very good coverage as far south as Hobart, and to parts of the north and north west coast of Tasmania, as well as coverage of many of the hundreds of lakes in the highlands. So now let me set the scene.

The Central Highlands area of Tasmania is festooned with a myriad of lakes and streams, very suitable for fly fishing in the warmer months. For most of my life I have spent holidays and long weekends fishing, walking or enjoying the peace and quiet which only a layer of snow can bestow. My wife, Sue VK7KSU is a very experienced bush walker and photographer and often accompanies me to a lake, to then go and do her thing with walking and /or photography. Probably 20 years ago, I began to hear rumours that there was a newly licensed amateur and keen fisherman at one of the lakes near to where we had our weekend shack. One night I heard a very strong station on 80 metres and recognised the voice from my long ago school days. Yes, David (now VK7OB) had had the misfortune to share the same school classes with me in the late 1950s and early 1960s. We had then lost contact with each other, save for the occasional word in the street as our work activities were largely unrelated. I knew that David had a national, if not an international reputation as a fisherman of note and had designed a particular pattern of dry fly, which was revered around Tasmanian fly fishing circles. His present ageing Labrador,

Obi, is even named after it. Thus, the time was overdue for us to meet up again and renew an old friendship.

One of the first things I noticed about his fishing apparel was that he had a small rubber duckie protruding out of the top pocket of his fly vest. Yes, he had discovered the VX-1, although I had not until then heard him on a repeater, only on HF. Initially I scoffed at the usefulness of such a tiny radio but I was soon disabused of my scepticism. He offered me the remains of his first VX-1, which had been damaged by a fire at his home QTH and written off. The case showed signs of heat damage, but it did not take much work and the radio was up and running. Its circuit boards were coated with powder from a fire extinguisher, which surprised me at how well that stuff got into a well sealed little radio. Until its dying day, it never looked very nice with its heat damaged case. But it served me well for a couple of years until suffering a fatal heart attack.

So David and I could tick off the following things in common:

1. We both liked to fly fish.
2. We both liked to talk about fly fishing.
3. We both liked to boast about the fish we caught.
4. We don't take our fishing too seriously.
5. We also liked amateur radio.
6. Our wives are amateurs.
7. The four of us were partial to red wine, particularly when consumed at dusk, on the shores of a lake.
8. We all had a long standing interest in the highlands and walking.
9. We have dogs as pets and they enjoy outings, particularly when a large fish jumps out of the water near to them. Warning, fish on hook and dog in water, do not make for a good combination.
10. We could each enjoy the other's success and in the unlikely event that one of us ever fails to catch a fish and the other of us is successful it is likely that we will laugh even though the joke is on us.

Photo 2: David VK7OB with VX-1 loaded and ready for action at the entrance to his shack, venue for the annual general meetings of CHARCT.

11. Summer or winter we and our spouses enjoy being out in the countryside.
12. David and I have a good arrangement. He ties good flies for us and I fix our radios.

It will not come as a surprise then, to hear that since his early retirement from the full time work force, David has taken every opportunity to use amateur radio as a means of causing me discomfort. Many Tasmanians would have heard him call me, when he was fishing, and I was working, and then leave the PTT engaged so that all could hear the sounds of landing a large trout. I think that on occasions he is making pretend fish catching noises.

I would like you to believe that this conduct is one sided, but that would not be true. On one occasion he was working on his shack and I took great delight in relaying to him each time I caught a fish. This was particularly appropriate. I had been installing cables in his roof, and noticed a fish surface in the lake just a few metres from the shore.

A quick sprint down the ladder, into his boat, and I had the fish firmly on my line. He had declined to join me. When I landed the first fish, he changed his mind but I then refused to return to the shore to pick him up. In the space of a few minutes I had landed three fish and all he could do was stand on the shore speaking some strange words to me. He was not very pleased with me that night.

David and Marilyn VK7FMAZ, through their interest in amateur radio and the highlands, have helped to bring about the continuing success of the Central Highlands Amateur Radio Club of Tasmania. Because of their hospitality many visitors from interstate and overseas have been able to experience firsthand the joys of combining these two hobbies. And of course, the Club hosts the bi-annual Tasmanian hamfest which in 2010 attracted almost 200 people to the Central Highlands for a day of amateur radio fellowship. David organises this event, almost single-handedly.

For many years, they were regularly visited by an amateur from the United States whom they first met on 20 metres.

It is not uncommon when I am working a DX station and give my portable QTH, to be asked if I know them.

I cannot tell you how many people have eaten at David and Marilyn's table over the years, but I can tell you that a great many of them have enjoyed the pleasure of fresh trout caught in the lake adjacent to his shack.

Many have pulled up in campers, have pitched tents, have slept in the

Photo 3: VK7FMAZ, VK7OB and the writer. It is clear who caught all the fish that day.

Photo 4: Returning from another successful fishing trip.

bunkhouse next to the shack, but almost all of them have been drawn there because of the hobby of amateur radio. Small quantities of alcohol have occasionally been known to be consumed late into the night, requiring a large recycling bin to be on hand.

Oh and did I tell you how quiet this area is for working HF DX?

Sometimes it seems that there are not enough hours in the day, with fishing, joining in nets on air, and chasing DX. It is a good thing that other domestic chores can wait until a windy day, literally.

It seems that at the most inappropriate moment, the VX-1 will jump into life with a request for a first hand report on your progress. Often enough, this is fishing speak for, 'I have just landed one. I just called to gloat'.

As mentioned, the basis for our being allowed use of the repeater site was its availability in emergencies. David is a member of the local Fire Brigade and I am closely associated with the communications section of our State Fire Commission. In addition, we have both developed a good relationship with the police and other law enforcement people in our area so that there is no hesitation in calling for our help in an emergency.

Occasionally, therefore, one, the other or all of us, are called in to help with some emergency or other in the highlands. These have included a log truck which caught on fire on a blind bend when its brakes jammed on, a drowning at a nearby lake, a multiple drowning, an inebriated, elderly fisherman breaking his leg in trying to walk on ice wearing Ugg boots, a car running off the road and setting off a large grass fire, missing bush walkers, and so on.

I will never understand why people think they can walk in our central highlands during any time of the year in light tops, shorts and sneakers. We can experience snow at any time and no one should ever take this country for granted, no matter how the day starts off. They should realise that their thoughtlessness is interfering with our fishing. It has also caused lives to be needlessly lost.

On one occasion, David and Marilyn were bush walking near Cradle Mountain and therefore many miles from our fishing lakes, when they came across a badly injured walker. By climbing to the top of the nearest mountain, his little VX-1 was able to call for help and it was not long before the rescue helicopter arrived, following David's co-ordinates of latitude and longitude. At that time the carrying of EPIRBS in Tasmania's highlands was the exception rather than the rule so that this walker was at grave risk had David and Marilyn not been able to secure help.

Now I did mention that we are partial to a glass of red wine, particularly when consumed near the shores of the lake at sunset. We are all exceptionally careful that the one glass does not extend to two or more, because there is always the journey home to remember. In David's case, the best shore to partake of a glass is situated several hundred metres from his shack, from where one can carefully navigate back to his shack, unless interrupted by a fish surfacing in front of us and begging us to put it out of its misery.

It is amazing how quickly the two of us can carefully place our glass on the ground, grab our rod and position ourselves to cast at the errant fish that has disturbed our concentration, to return a few minutes later, usually with one or other of us having been successful, to continue our discussion and our quiet drink.

I regret to say that the VX-1 whilst very useful has no features which increase our chances of catching a fish. It is very helpful though for us to compare notes and to make fun of several other amateurs who we could be sure would be listening to the repeater but who, surprisingly, are less reliable at rising to the bait of our conversations, than the fish are. One such amateur is a dedicated duck hunter. He religiously refuses to join in any discussion about the prevalence of ducks, when he is at home, some 150 km south of us.

I can remember that when I was first licensed, over 45 years ago amateur radio and fishing did not really work together, due to the size of radios and the obvious difficulties of operating away from mains power. In those days, my hand held radio consisted of a war surplus Motorola BC 611 HF valve radio (more accurately called the SCR 536), with its ON/OFF switch activated by extending or retracting the telescopic antenna, one channel and a range across land of a couple of miles. Oh, and not to ignore a battery life of a few hours, replacements having to be made from surplus unused dry cells?

Imagine how the soldiers of WW2

Photo 5: Sue VK7KSU on Collins Cap north of Hobart, camera at the ready, VX-1 secure in her coat pocket. Too cold for fishing that day, but not too cold to be out enjoying the fresh air.

would have felt had they been able to use a radio which weighs a few grams, with batteries little bigger than an AA cell, which last all day, versus the so called Handie Talkies which weighed several kilos with batteries installed, and were the size of a large brick.

We are lucky to live in the solid state age where tiny radio devices are cheaply available, have amazing flexibility and versatility which gives us options of enjoying our various hobbies in any manner of ways, which were not even dreamed of 40 years ago.

So on any reasonable weather day, it is not uncommon to find two sprightly middle aged men, accompanied by their much younger spouses and sometimes by aging canines, walking the shores of one or other of the lakes of Tasmania's central highlands. Whether separated by 50 metres or 50 kilometres we are always able to compare notes by virtue of the incomparable little VX-1. If any of us go our separate ways for half an hour or half a day, the radio keeps us in contact, so that we can arrange where and when to meet up at the end of the day. No matter what, we are only a call away.

I can tell you that sometimes it takes great dexterity and concentration to answer, particularly when you have a fish on the end of the line, a fishing net in the other hand, you are chest deep in water, your waders are leaking, the cold water is affecting sensitive parts of the anatomy, the march flies are being pervasive and you are losing sensation in your hands due to the cold.

So when you next see a VX-1, be suitably amazed at the versatility and reliability of such a little radio. At the same time, you might spare a thought for David, Marilyn, Sue or myself who are probably waist deep in freezing water, playing another of the mighty Tasmanian rainbow trout or walking in some of the most beautiful countryside imaginable.

Photos 1, 2, 3 and 4 were taken by Sue VK7KSU.

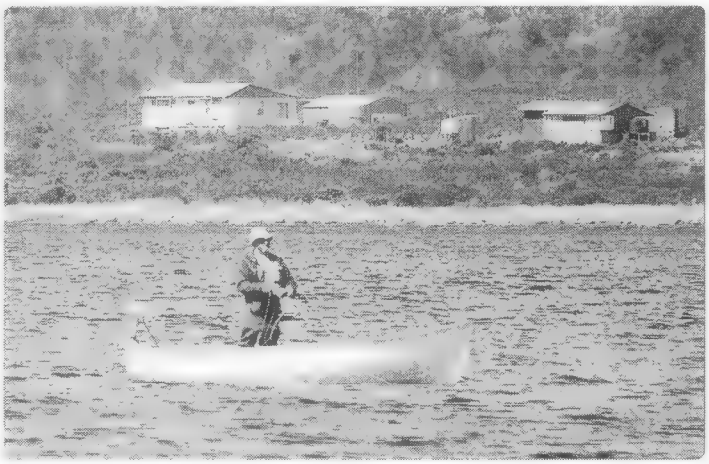


Photo 6: The writer fly fishing near the shore of Little Pine Lagoon. (Photo by Martyn VK2NFP/7 another keen fly fisherman).

OXLEY REGION AMATEUR RADIO CLUB Inc

PORT MACQUARIE NSW

36th ANNUAL FIELD DAY
JUNE LONG WEEKEND
SATURDAY & SUNDAY 11-12th JUNE

Our 40th Anniversary 1971-2011

GENERAL INTEREST DISPLAYS
TRASH & TREASURE SUNDAY ONLY
TRADE DISPLAYS SUNDAY ONLY
FOX HUNTS SAT & SUNDAY

Entry only $5

www.orarc.org for more details

FIELD DAY DINNER SAT NIGHT
FOOD AVAILABLE
FREE COFFEE & BISCUITS
SOFT DRINKS

CONTACT FIELD DAY COORDINATOR: HENRY LUNDELL VK2ZHE. Email: lundell@tpg.com.au
Location: TACKING POINT SURF LIFESAVING CLUB MATTHEW FLINDERS DRIVE PORT MACQUARIE

Presentation of Long Service medals for WIA members of Rockhampton & District Amateur Radio Club (RADAR)

Les Unwin VK4VIL

Photo 1: The WIA 25 year medal.

Photo 3: A number of recipients of the medal with WIA President Michael Owen VK3KI.

During the recent visit to Rockhampton of Wireless Institute of Australia President Michael Owen VK3KI, the Rockhampton and District Amateur Radio Club (RADAR) took the opportunity to present 25 year WIA long service medals to eighteen amateurs in the region as part of the WIA 100 celebrations.

Recipients included Len Effeney VK4DI who has been with the WIA for over 60 years, Ray Elliot VK4BLK, 57 years, and husband and wife team Gordon and Mary Adams VK4GM and VK4PZ respectively, holding in excess of 90 years membership between them.

The medals, produced locally, were an initiative of well known central Queensland amateur Clive Sait VK4ACC, who also organized the Queensland President's luncheon, where most of the medals were presented.

President Michael also cut a WIA Centenary cake, specially produced for the occasion. Sanction by the WIA was gained for the presentation. While Michael indicated the value of recognizing the service of long standing members, he advised that the WIA, understandably, does not hold personal histories dating back a couple of decades.

Photo 4: Mary VK4PZ is ecstatic to receive her medal from the WIA President Michael Owen VK3KI.

Consequently, he saw merit in similar presentations being made by clubs who held the necessary information and recommended this activity to other clubs. Amateur Radio New South Wales, for example, presents 40 year service certificates.

Information regarding these medals can be gained from Clive Sait VK4ACC QTHR.

Editors note: Len VK4DI became a SK on 1 February, 2011.

Photo 2: A very proud Ray Elliot VK4BLK with his medal.

Photo 5: Clive Sait VK4ACC, Michael Owen VK3KI and Mary Adams VK4PZ cutting the Centenary Cake at the Queensland luncheon.

VK3news Amateur Radio Victoria News

Jim Linton VK3PC
www.amateurradio.com.au
arv@amateurradio.com.au

The Annual Reports

These have been issued along with a notice of the Annual General Meeting of WIA Victoria trading as Amateur Radio Victoria at 8 pm on Tuesday 17 May, 40G Victory Boulevard, Ashburton.

They can be found via a link made available to e-member users with email addresses since early April, posted as a hardcopy on request and through the mail to non-email address members.

In the Secretary/Treasurer Report is reported another very successful year which started in 2010 with the Centre Victoria RadioFest held again at Kyneton, continued through the year with Foundation weekend training and assessment sessions and another upgrade course.

In the accompanying financial reports our position is very sound and the fruits of our re-investments are now showing very good results. Your Council again sees no reason in the foreseeable future for membership fee increases.

The grant from the Office of the Emergency Services Commissioner to rebuild facilities at Mt Stanley destroyed by fire during the Black Saturday emergency is discussed by Ross VK3CE in detail.

The VK3RNU repeater at Mt Stanley was destroyed in the bushfires. The burnt remains have been removed from the site. The story continues with the President Jim Linton VK3PC describing it as the major project of the year.

Terry Murphy VK3UP, the Event Coordinator and gang did extremely well to win, for Amateur Radio Victoria, the inaugural "Tune-in the world – amateur radio gets people talking" WIA National Field Day.

Amateur Radio Victoria featured heavily during the WIA centenary celebrations in early May through the efforts of David McAulay VK3EW, Noel Ferguson VK3FI, Terry Murphy VK3UP and Keith Proctor VK3FT.

Thinking caps for Centenary

We began as the Amateur Wireless Society in 1911 and soon after adopted the name Wireless Institute Victoria. In this milestone year some thought has been given to how best to mark the occasion.

First is a special callsign to be run through the month of November with an appropriate QSL card. Others include a global first event on the VK3RTV repeater, a formal dinner or informal BBQ, a day or weekend of activation in the National Parks.

It would be wrong to dismiss the 100th anniversary of our organisation but consideration of such occasions, do need planning time and plenty of publicity to be a success.

Education activities continue

Become a radio amateur, enter an exciting communications hobby through the Foundation licence. The study and operational practice guide book for the Foundation licence covers all you need: mail orders $26.00.

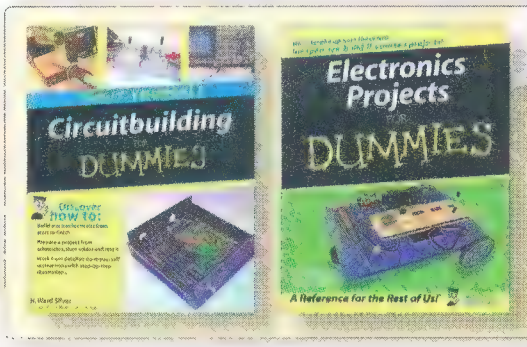
The next weekend course is 23 & 24 July. Inquiries to Team Leader, Barry Robinson VK3PV, either via email to *foundation@amateurradio.com.au* or phone 0428 516 001.

We welcome the return of Kevin Luxford VK3DAP as the instructor, who has recently successfully delivered another Bridging Course taking those already qualified at the Foundation level to that required to be found competent for the Standard Licence theory.

In all five progressed through his tailored class held at 40G Victory Boulevard, Ashburton on a number of weekday nights. Three attempted the assessments and were found competent. The remaining two will undertake the written assessments shortly.

Membership inquiries

To join and support the state-wide organisation Amateur Radio Victoria costs $30 for Full or Associate membership and $25 Concession, for two years. New members are most welcome and an application form can be found on our website or posted out on request.



Special price for WIA Members!

Circuitbuilding for Dummies & Electronics Projects for Dummies

Just $12 each (plus p & p)

View and order online at **www.wia.org.au/bookshop**

The WIA Online Bookshop

- A service provided by the Wireless Institute of Australia.
- Over 100 locally and internationally sourced publications.
- Discounts for WIA members.
- Secure online ordering.
- Delivery to your door.

Visit the WIA Online bookshop today at **www.wia.org.au**

Moorabbin and District Radio Club
PO Box 58 Highett 3190

VK3APC

HAMFEST 2011

Saturday 7th May 2011

Location - BRENTWOOD SECONDARY COLLEGE

Watsons Road, Glen Waverley. Melways Reference 71 D7 (Enter via Heath Street.)

*** GREAT VENUE * PLENTY OF SPACE * MELBOURNE'S BIGGEST * MAJOR AND MINOR DOOR PRIZES**

The Moorabbin & District Radio Club have much pleasure in inviting you to participate in VK3's BIGGEST ANNUAL HAMFEST.
Snacks and hot food will be available.
Talk in via VK3REC 2M repeater on
147.175MHz and on 439.900 70cm VK3RSE

PRIZE DRAWS
Major and minor draws during the day. Every entry ticket goes into the draw. Additional tickets on sale.

SALES: NEW
Importers and suppliers of amateur equipment & accessories.

SALES: USED
Preloved ham gear & accessories, PC's & bits & pieces.

All inside and undercover. Demonstrations of Radio equipment and accessories.
ENTRY ONLY $6.00 (Doors Open 10am – entry tickets on sale prior)
(INCLUDES **FREE** DRAW IN THE MAJOR DOOR PRIZE…..)

Tables available at $20 each, (1.8m long) includes lunch voucher.

For further info or to book a table please contact:
Lee Moyle, VK3GK. Tel: (03) 9705 1051. Fax: (03) 9705 1054.
Email: *vk3gk@aanet.com.au*

Graeme Lewis, VK3GL. Tel AH: (03) 9702 1199 or Mobile (0418) 171601
Email: *vk3gl@bigpond.com.au*
Webpage - *www.mdrc.org.au*

VK5news

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

Our talk in March was given by Iain VK5ZD about his experiments and experiences with SHF radio.

He had antennas at the meeting for 3.4 GHz, 5.7 GHz and 10 GHz and he had people lined up at a distance so he could actually demonstrate contacts on these frequencies.

On the night we heard a couple of contacts from the Hummocks, over 100 km away and another from a little nearer than that. Iain also told us about the records he and some of his friends have made recently, with the equipment he had on show. They have not had the mobile record confirmed yet but it is over 120 km on 10 GHz. No doubt we will hear more of this in the future.

It was a most impressive demonstration and will possibly inspire some more of the AHARS members to try some SHF. There are some members of AHARS already experimenting through one of the other clubs in Adelaide.

There is always another way to enjoy amateur radio.

One of these ways is as part of the John Moyle Memorial Field Day held over the weekend of 19/20 March at Womberoo near Swan Reach.

Eleven members spent the whole weekend there and three more joined us on Sunday. Rob VK5RG was there early enough to make a few contacts while Richard VK5ZNC and Sue VK5AYL arrived in time to help with taking down the antennas and packing away.

Photo 1: The 10 GHz dish set up for the demonstration of SHF operations.

Photo 3: General view of "Womberoo", in bushland near Swan Reach, Murray Mallee country.

It was interesting to see that this year 80 metres, which had been amazingly good for the last two years, was much less busy this time. 15 and 10 metres are still disappointing. In fact there were not a lot of people on the bands through the night this year, but some of our operators were there to catch the beginning of the night owl section, 11.30 SADST.

The weather was very kind. It was pleasantly warm under the tents with a bit of a breeze now and then. The only bother was the March flies – how do they know the date?

Kevin VK5AKZ used the suggested computer log program at the end of the contest to make it easier to submit the logs.

Thanks to all who participated.

Photo 2: The VK5BAR crew at the dinner table. L to R: VK5s Christine CTY, Karsten ZKT, Kim FNET, Janet, David AAH, Sue AYL, Robert ZHW, Tina TMC, Richard ZNC, Jenny FJAY, Kevin AKZ, Rob RG, and Deidre. Photo by John VK5EMI.

VK2news

Tim Mills VK2ZTM
vk2ztm@wia.org.au

A month to go until the 36th annual **Oxley Region ARC** field day which will be held in Port Macquarie on Saturday 11 and Sunday 12 - the June long weekend. This year it will be held at the Tacking Point Surf Club which is in Mathew Flinders Drive, Lighthouse Beach. The dinner on Saturday night will be at the Tacking Point Golf Club at 6 pm. Over the same weekend the Winter Sun Festival is being held with many thousands expected to be in town – hence the change of venue – and this will stretch the available accommodation – book now if you need a bed – you might be lucky. The 40th anniversary of the formation of the club will be celebrated over the October long weekend. Amateurs on the Mid North Coast now have the advantage of a recently opened Jaycar company store in the Port Macquarie industrial area.

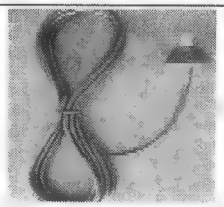
The **Waverley ARS** will be conducting assessments this month over the weekend May 14 and 15. Details at *education@vk2bv.org* A Saturday morning in mid July will be their annual auction at the Rose Bay club rooms. **Liverpool & District ARC** meet on the second Wednesday evening at the QTH of the President. **St. George ARS** will be celebrating their 40th anniversary with a dinner on Wednesday May 4: *www.sgars.org*

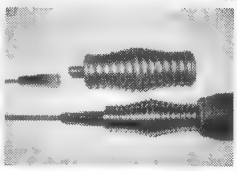
Summerland ARC will have a Standard course this month. Then SARCFEST on August 7. The annual 40 metre antenna Shoot Out on September 25. In October across the weekends of the 8/9 and 15/16 there will be an Advanced course *www.sarc.org.au*

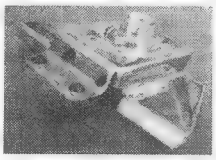
Orange & District ARC are in the middle of the special event call VI50AOA as part of their 50th birthday celebrations. The Riverina field day is set down for Sunday July 31 at Albury/Lavington.

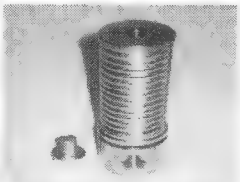
The next **ARNSW** Trash and Treasure event at Dural will be on the last Sunday this month – May 29. Also available in the morning is the regular exam assessments. The afternoon has the Homebrew and Experimenters gathering. Big thanks to those who continue to provide donations of their unwanted electronic items. Profits from sales of such items enables **ARNSW** to provide a free sausage sandwich from the BBQ to everybody in attendance.

TET-EMTRON

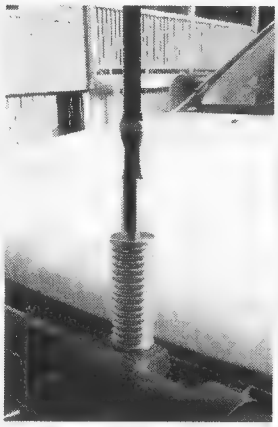

Base and Lead sets.


Codan Springs and Whips.


Mobile Mounts.


HF Base and Springs.

See our wide range of new mobile parts and products at:-
www.tet-emtron.com
TET-Emtron
80 Stock Road, HERNE HILL. WA 6056
Phone: 08 9296 3224


New ATW3040 HF + 6 metre Whip. Designed to be used with an Auto tuner (like the AH-4 or SG-237) for maximum efficiency. Made of fibreglass and coated with a tough flexible polymer finish. See the website or ring for more details.

DX - News & Views

John Bazley VK4OQ
john.bazley@bigpond.com

From the following report by Antonio Gonzalez EA5RM, a lot of time has been given to ensure that the two DXpeditions already announced can activate the next new entity.

*After a long way, a lot of hard work and several successful meetings with **Southern Sudan** Government officials of various Ministries, the first amateur radio licence has been issued by the new government.*

Southern Sudan Government officials now understand amateur radio and they are ready to change the actual rules and regulations as soon as possible, looking to simplify the process of obtaining a licence, so that everyone can enjoy amateur radio in this new country.

We have the cooperation of both Ministries to update our licence if there is a new prefix that will be assigned by ITU and we will be in permanent contact with the proper department helping in the development of amateur radio in Southern Sudan.

Our DXpedition will start on 9 July from Juba so please stay tuned.

I want to thank the Government of Southern Sudan officials for their cooperation and my whole team for support.

Another welcome news item for this part of the world, from Rick, NE8Z who informs us that he has been issued a *"pilgrim visa"* to enter **Mt. Athos** and will be visiting Monk Apollo (SV2ASP/A) on 9-16 April.

"I will be taking him radio equipment accessories to compliment his present ham radio station", Rick says, *"Monk Apollo has shown the desire to operate from portable locations in Mt. Athos so that he can work Asia which is partially blocked by a mountain behind his Monastery".*

The Southeast Michigan DX Association has adopted the project of helping Monk Apollo to improve his permanent and portable stations. Details on the project and a PayPal link for donations can be found at http://live.semdxa.org/ (click the "Monk Apollo Project" button).

The Oceania Amateur Radio DX Group, ODXG, is planning an expedition to **Vanuatu**, YJ0, 28 September to 14 October. Participants are being sought. Organizer VK3QB says, *"Being reasonably rare DX, coupled with being a sought-after multiplier for the Oceania DX Contest should prove a good formula for high QSO rates, good pileups and fun for new operators learning the ropes."* He says the timeline allows plenty of time for sightseeing and relaxing too. Plans are still developing but multiple stations from two locations on the island of Efate (Port Vila) are likely. It is a four-hour aeroplane flight from Melbourne, Australia. There are also regular direct flights from Sydney and Brisbane direct to Port Vila. The cost is currently estimated at about $2,000 per operator, which includes air fares from Australia. Contact Chris VK3QB at this email: *vk3qb@wia.org.au* or telephone 0429-187-593 with a brief overview of your interest and relevant or special skills (operating or other) that might be useful on a successful DXpedition.

Serge UV5EVJ, plans to be in Entebbe (KJ60fa), **Uganda** from March 21 to June 8 and will be QRV as 5X1VJ. His licence is good until the end of June. Serge is using an FT-850 running 100 watts into a Windom, which has a high angle of radiation, *"so don't expect strong signals"* he says. Activity will be on 7 to 28 MHz on CW and SSB. QSL via UV5EVJ either via the bureau or direct to Sergiy Ivanovich Shpak, P.O. Box 2378, Dnepropetrovsk 49040, UKRAINE with SAE and US$2 for postage. His local post office at home does not accept IRCs.

Petr OK1CZ, plans to attend this year's Dayton Hamvention and afterwards go to **Puerto Rico** and the **US Virgin Islands.** First stop will be from KP4 from May 23 to 25 and then from May 26 to 31 from KP2, including the CQ WPX CW test. As of the moment he does not know what calls he will be using but could be KP4 and KP2 /OK1CZ or /AA1TR with the possibility of a special call during the contest.

Several months ago there were rumours of a group planning to operate from **Socotra Island** (AF-028). Those not familiar with IOTA may not realize this unique island counts as **Yemen** (7O) for DXCC purposes. It looks like the rumour of a group planning to go was true as someone has a website *http://7o7s.de/* It has since been pointed out that the web page was created a long time ago and there has been no activity on the site for years!

Time on **Marion Island** by Pierre, ZS8M, is coming to a close. He expects to QRT on May 5, as his team departs the island. The supply ship, which will be taking his team off the island, is expected to arrive on April 11. *"I hope to be able to operate after working hours"* prior to leaving.

DX World.net reports Wild Bill N2WB is planning a DXpedition to **Honduras** in the April/May time period.

Alan VE1AWW is heading back to **Sable Island** where he will be QRV as VE1AWW/CY0 in April through June.

Nigel ZL2SEA is now on **New Caledonia** and plans to be QRV as FK4WBT for about a year. During his evenings he frequents 20 metres, typically around 0830 Z to 0930 Z, usually earlier on Sundays.

DX0DX. After the failed attempt in January, the DX0DX expedition to the **Spratly Islands** (*www.dx0dx.net*) has been postponed until next year. The team leader (Chris Dimitrijevic VK3FY) says he is *"determined to recover as much of the costs as possible to put things right for all the team members, sponsors,*

organisations and individuals involved", and *"to put DX0DX off until next year will allow me time to clean up the situation from the first attempt"*. The new target date is April 2012.

Tom Smith ZC4TS reports he has gone QRT "for good". He has disconnected his rig and taken down his antennas and will be heading to the US in two weeks. QSL via NI5DX. Currently the only amateur radio station QRV from the **UK Sovereign Bases on Cyprus** is ZC4LI.

EF8M from the **Canary Islands** will be on for the WPX CW Contest May 28-29, single op all band high power. QSL via UA3DX.

QSL **8P6QL:** The Yasme Foundation is not the QSL manager for any current or recent 8P6QL operation. The Colvins (Lloyd W6KG and Iris W6QL) used the callsign back in October 1981. Yasme can handle QSLs for the 1981 operation, but nothing since.

QSLs from **ZL8X**: the team reports *"We got our first boxes with QSL cards from the printer and have already started to send the first cards out. DX clubs with a special QSL service for their members (GDXF, SDXF and DDXG) were the first who got them. Followed by another 1000 letters last week we continue working on the over 4000 direct request which came through OQRS"*. All QSOs were uploaded to LoTW the very same day the cards were received from the printer. The latest information from the ZL8X team (10 March) can be found at *www.kermadec.de*

Dave A92IO (EI3IO) has posted a note on his QRZ.COM page saying *"Due to the deteriorating situation within the Kingdom of Bahrain, it is becoming increasingly difficult to travel within the country. Therefore please do not send QSL requests to my Bahrain address (PO Box 31183) until further notice. Also please do not send to Ireland for the time being. At present all QSOs are confirmed by ARRL's Logbook of the World for DXCC and by eQSL for WAZ etc. Sending QSLs via EI3IO through the bureau system (not via the A9 bureau) is also OK."*

Good luck in the pile-ups!

Special thanks to the authors of *The Daily DX (W3UR), 425 DX News (I1JQJ) and QRZ.DX* for information appearing in this month's DX News & Views. For interested readers you can obtain from W3UR a free two-week trial of The Daily DX from *www.dailydx.com/trial.htm*

tts systems

www.ttssystems.com.au

Phone: 03 5977 4808 Email: info@ttssystems.com.au

Your Australian reseller for:

BUDDIPOLE

Palstar

LDG ELECTRONICS

...America's Best! TEN-TEC

spiderbeam high performance lightweight antennas

VIBROPLEX

SGC

AVAILABLE NOW

12 m and 18 m Telescopic Fibreglass Poles from **Spiderbeam**

Meanwell power supplies

Diamond products

Daiwa products

Technical books

Amidon products

Custom cables made to order

As always, you can get a free catalogue - just call!

VK6news

John Ferrington VK6HZ

Welcome to VK6!

I would like to start by thanking Keith for the last several years of compiling the VK6 Notes. I know I for one, have always looked forward to reading about the goings on in our great state each month. I hope I can continue the momentum that Keith has started.

Hi. My name is John Ferrington, my call sign is VK6HZ. I have lived in VK6 for the last nine years. My wife is a native sandgroper. It is her fault I am in WA. I, like so many who call WA home, am originally from VK2, more specifically the Blue Mountains. It is people like Jim Jones VK2AUX (SK), Geoff Donnolley VK2EGD, John Marshall VK2EGI/GI, and Brendon Austin VK2BCQ, who ignited and nurtured my passion for radio all those years ago that helped me obtain my Novice licence, VK2VOX, back in 1984 at the age of 18.

Enough about me. What about VK6?

Cavity Modification and Tuning Day

March 5 and 6 on the WARG (WA Repeater Group) calendar was the Cavity Mod and Tune days at the Peter Hughes Scout Communications Centre in Cannington WA.

Arranged by VK6TWO Heath, the day was to stock take and audit the number and type of repeater cavities available to the group for a number of upcoming installations and for optimizing performance and reliability of the current operational repeaters.

Thanks to donations of second hand high band combinations, work was also undertaken to reconfigure these units for amateur radio installations.

Members and non-member alike arranged

Mon VK6FMON keeping a keen eye on progress.

the Scout hall into a production line and work began. Under the watchful eye of self-appointed quality control officer, coffee maker and runner Monique VK6FMON, tasking of the various stages was allotted to various members (no one was game enough to argue the position, Mon had a big stick).

First item on the agenda was to prepare the die cast boxes for the tops of the cans. Armed with drill and hole saw kit, Marty VK6FDX (below) and Jon VK6FJON went to work like men possessed and turned the boxes into items that reminded us of a particular type of cheese.

Link cable construction was left to Craig VK6FLAM. Along with these cables, Craig also had the new Kellerberrin repeater and APRS digipeater onsite so that cavities could be set up and configured. Steve VK6CS made the mistake of putting his head through the door on Saturday morning to say a quick "g'day" and ended up staying for the two days. Put to work on the Kellerberrin cavity, the task had him on his knees a number of times. Whether he was praying for the can to work right or he was just getting up close and personal, well that was anyone's guess. I can confirm that Pepsi and pizza had something to do with his long term stay.

Marty VK6FDX hard at work!

A surprise visit from Dennis VK6KAD had tools down for five minutes allowing everyone to have a chat with him. Dennis has not been well for some time and it was great to see him up and about. He kept a close eye on Steve whilst the Kellerberrin cavities were being attended to.

The weekend eventually came to a close about 5 pm on Sunday. Everyone went away with a better understanding of the cavities and their application. Thanks must go to all who attended and made the weekend a success: VK6TWO, VK6FMON, VK6FLAM, VK6LV, VK6FDX, VK6ZRW, VK6CS, VK6FJON.

Thanks guys. Sounds like you had a productive weekend!

Steve VK6CS tuning the new Kellerberrin cavities with Denis VK6KAD in the background.

NCRG

The last few months have been rather busy at NCRG. We have a newly elected committee. Congratulations to Richard Beck VK6BEC our new President, Gerhard Mueller-Dorn VK6GMD secretary and Anthony Lumley VK6AL Treasurer. Well done guys. We look forward to your leadership for NCRG.

Contest season saw the club station get a decent workout in several contests. The club entered the CQWPX contest in the Multi-1 category. I am not sure of the final score as I have spent the last week of March at Rottnest Island with my family.

Well that just about wraps up another month from VK6 and zone 29! I look forward to bringing you the news from around VK6 next month.

2011 WIA Urunga Radio Convention

Ken Golden VK2DGT
krgolden46@hotmail.com

See you at **Urunga Radio Convention** on again this Easter weekend, Saturday 23 and Sun 24 April 2011, *Senior Citizens Hall* Bowra St. Urunga.

The longest running Fox Hunt Field Day in Australia - two days of *Fox Hunting.*

Quizzes, raffles, and pre-loved gear, displays, enquiries welcome.

CHADARC will cater for lunches again this year. Free tea and Coffee available for those registering, (Numbers required for optional meal on Saturday night at Bowling Club, notify Committee).

The old cups from the early days are on display at the convention, and other times at *The Ocean View Hotel* where some of the early conventions were held.

An adjoining lounge is available for those that want to get away from the activities.

Urunga is a quiet village ideally suited to Fox hunting.

It's a very relaxing environment on the Kalang River, and has old style charm, ideal for families.

Close by is Coffs Harbour and Bellingen, or perhaps a drive on Waterfall Way to Dorrigo and the National Park "Sky walk", picnic areas and lookouts,

Visit the Golf or Bowling clubs, or walk to the Ocean on the meandering Footbridge for a spot of surf fishing

Check "Urunga Radio Convention" web page *http://www4.tpgi.com.au/goldy2/*

Rodney Somerville VK2TI and Ken Golden VK2DGT ready for the 2 metre mobile hunt.

40 metre foxhunt participants: Chris Williams VK2YMW, Rodney Somerville VK2TI, Carl Winkler SWL, Graeme Obrien VK2FA, Bryan Ackerly VK3YNG, Geoff Pages VK2BYY.

VK4news

Bundaberg Amateur Radio Club

Gail Lidden-Sandford
Secretary

Bundaberg Amateur Radio Club turns 50 this year.

And they're looking for past members to return home.

On a warm spring evening of 21 September 1961 a group of 12 amateurs met in Bundaberg and created an amateur radio club, adopting the aims of the Qld WIA and setting the dues at one pound.

BARC has remained active and a continuous member of the WIA since that date and is proud to announce they're having a birthday party in 2011 to celebrate 50 wonderful years.

The President of Bundaberg Club, John (Rusty) McGrath VK4JM, who incidentally was one of those at the inaugural meeting, wishes to extend an invitation to friends of the club to gather in Bundy for the festivities.

He said emails would be circulated to club Secretaries asking for notices in newsletters and radio news programs in an effort to locate our past members who have moved away from the area.

The club intends to hold a reunion luncheon so that old friends can return to Bundaberg to meet and recall the past and he urged anyone with ties to the Bundaberg club over the years to watch the website **www.barc.asn.au** and follow the 50th anniversary links for information on the dates and events.

Barcfest 2011

Mt Gravatt Showgrounds

1644 Logan Road, Mt Gravatt QLD. 4122

Saturday 7 May

Doors open 9.30 am
Admission still only $7.00

For information and site bookings

Contact Les VK4SO on 0411 729 642
Email: *parkerlf@optusnet.com.au*

Tea, coffee, cold drinks etc. will be available at the venue.

AMSAT

David Giles VK5DG
vk5dg@amsat.org

'F" is for ....

The fickle fist of fate was felt in the failed launch of NASA's Glory mission and the three cubesats with it. These satellites were described in last month's column. Also this month is news on the start of AMSAT-NA's new satellite and more on AMSAT-UK's FUNcube.

Failure

Three minutes into the flight of the Taurus XL rocket, the ground crews monitoring the launch knew they had a problem. A fairing separation system that is used to deploy the satellites failed to separate and the rocket crashed into the southern Pacific Ocean. Of the nine Taurus rockets launched there have been three failures. These have been in the last four launches costing over US$700 million in lost satellites (not counting the cost of the rockets themselves). The last two launches have both had fairing separation failures despite the manufacturer spending two years to correct the problem. The fairing is an outer shell that protects the satellites as the rocket accelerates through Earth's atmosphere. In this case the fairing did not separate so its extra mass prevented the rocket reaching orbital velocity.

The makers of KySat-1 are hoping that NASA will make another ride available. There were two versions of KySat made and it would only take six months to transform the engineering version into a flight ready version. If not there are other missions in development (1). The other cubesat websites do not have any further news at this stage.

Fox

AMSAT-NA has started development on the Fox project. Fox will be a 1U size cubesat with a U/V FM transponder which will be a replacement for AO-51. The primary aim is cram in a cubesat the functionality of AO-51's FM voice transponder with enough power output to be used with handheld radios and antennas. This means there will be 1/16th of the volume and 1/5th of the surface area available compared to AO-51. AO-51 mass was 11.1 kg and Fox will be 1 to 1.3 kg. It will use a software defined transponder (SDX) of similar design to ARISSat-1 so that it could be reconfigured for flexible telemetry formats and linear or digital operation for future missions. The Fox developers hope to demonstrate a superior communications capability to other cubesat designers so they can use it for their missions. So far it seems that each cubesat has its own communications system with some of them being quite ineffective or needing specialised hardware or software. Most likely Fox will use telemetry protocols already proven by previous OSCARs.

The aims for Fox are a 800 km low Earth orbit, 500 mW transmitter on 2 m, digital uplink for commands and digital downlink for telemetry, magnetic stabilisation and deployable solar panels. SEEDS (CO-66) demonstrates that a 1U size cubesat can generate enough power to support an FM downlink of the order of 450 mW, there probably is not enough power to also support a receiver and digital signal processor. Fox will use deployable solar panels to increase the power budget. Deployable solar panels have been used successfully before on CUTE-I (CO-55) and Delphi-C3 (DO-64). There will also be enough room left over to fly an experimental payload, similar to the "This space for rent" sections of the microsat series (Oscars 16 to 19).

AO-51 was not built entirely by members of AMSAT and Fox will follow the same route. This time AMSAT members will be mentoring 34 engineering students at the State University of New York to work on parts of Fox.

The Fox designation is because it will be the sixth phase 2 satellite from AMSAT-NA. The previous five Phase 2 satellites are AO-5, AO-6, AO-7, AO-8 and AO-51.

An article in the Jan/Feb 2011 issue of the AMSAT Journal by AO-51 controllers Mark Hammond N8MH and Colin Hurst VK5HI explained the historical trends of AO-51's battery capacity. The bottom line is that after six years in space, AO-51's battery capacity has reduced to 15% since launch (as at May 2010, so it is likely to have further reduced). This is not enough to sustain AO-51 transponders during eclipse periods as operators now know. Thankfully none of the battery cells have short circuited as has been a sign of the nearing demise of previous satellites (yet). Time will tell if AO-51 will still be usable by the time Fox is launched; currently slated during 2013.

FUNcube

The FUNcube website continues to be updated as the project progresses. There are now working documents such as a block diagram and specifications. For the latest news and even a chance to be involved there is a Yahoo! Group set up. Details on the website (2). The FUNcube dongle has its own website (3). This is the wideband receiver that covers 64 to 1700 MHz and just plugs into a computer USB port.

Some parts of FUNcube are commercially manufactured by Clyde Space who have supplied to many missions. SumbandilaSat SO-67 was supplied with solar panels manufactured by Clyde Space. Ever had the urge to build your own satellite? Clyde Space has an online shop where you can purchase cubesat parts for every section of the cubesat except for your own experiment. They even have prices but beware as rocket science is not cheap.

Final Pass

The ground station of CUTE-1.7+APD II (known to the rest of us as CO-65) has added the message 'Ganbare Japan' to its telemetry stream. Ganbare means 'Show spirit' or 'Hang in there' as a message of encouragement. And don't they need it.

Rockets still fail even after all the decades of experience the US has had. Hopefully the second KySat will be able to go into orbit.

References

(1) *http://www.trailblazeronline.net/index.php?option=com_content&view=article&id=2284:kysat-1-crashes-down&catid=42:news&Itemid=70*

(2) *http://funcube.org.uk*

(3) *http://www.funcubedongle.com/*

AMSAT-VK

AMSAT Co-ordinator
Paul Paradigm VK2TXT
email *coordinator@amsat-vk.org*

Group Moderator
Judy Williams VK2TJU
email *secretary@amsat-vk.org*

Website
www.amsat-vk.org

Group site:
group.amsat-vk.org

About AMSAT-VK

AMSAT-VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial Amateur Radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft.
AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-VK monthly net Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 Z depending on daylight saving. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales
VK2RMP Maddens Plains repeater:146.850 MHz
VK2RIS Saddleback repeater: 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Queensland
VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404, EchoLink node 44666

In South Australia
VK5TRM, Loxton on 147.125 MHz
VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278, Echolink node 399996

In Tasmania
VK7RTV Gawler 6 m. Repeater 53.775 MHz IRLP node 6124
VK7RTV Gawler 2 m. Repeater 146.775 MHz. IRLP node 6616

In the Northern Territory
VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9558. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night.
Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

WIA news Continued from page 4

Ken holds a Bachelor of Science degree in electronics engineering and worked for KDD, now KDDI, in the satellite communications field for many years. During that time he worked in many countries, including five years stationed in the United Kingdom working with the International Maritime Satellite Organisation. He retired from KDDI in 2002.

Ken is currently head of the JARL International Section on a part time basis. He was first licensed as a radio amateur in 1967 and today continues to have an active interest in DX and contests.

Coming Events

10-12 June
VK4 – Far North and North Queensland Amateur Radio Gathering at King Reef Resort Kurrimine Beach.

9-10 July
VK3 – GippsTech 2011 VHF/UHF and microwaves technical conference, Churchill.

16 July
VK3 – Gippsland Gate Radio & Electronics Club Hamfest, Cranbourne.

31 July
VK2/3 – Riverina Field Day, Lavington.

7 August
VK2 – SARCFEST, Lismore.

Contests

Phil Smeaton VK4BAA/VK4KW

Mike VK4DX enjoying the score during the WPX SSB contest at VK4KW.

Contest Calendar for May 2011 – July 2011

May	14/15	CQ-M International DX Contest	CW/SSB
	7	**VK/Trans-Tasman 80 metre Phone Contest**	**SSB**
	28/29	CQ WW WPX Contest	CW
June	4/5	IARU Region 1 Field Day	CW
	11	Asia/Pacific Sprint	SSB
	18/19	**Winter VHF/UHF Field Day**	**All**
	18/19	All Asia DX	CW
	25/26	King of Spain Contest	SSB
	25/26	Marconi Memorial Contest	CW
	25/26	ARRL Field Day	All
July	9/10	IARU HF World Championship	CW/SSB
	16/17	CQ Worldwide VHF Contest	All
	30/31	RSGB IOTA Contest	CW/SSB

Note: Always check contest dates prior to the contest as they are often subject to change.

Welcome to this month's Contest Column.

Did you support the VK Team in Beru?

If you did – then it is more than I managed to do. Unfortunately, storm damage put my station onto the endangered species list for a while, taking quite an amount of effort to get the whole station up and running in time for this year's WPX SSB contest. A team of hardy souls descended upon VK4KW over a series of weekends to cut, solder and weld the station back into life again. My heartfelt thanks go to the whole '4KW team for pitching-in and giving-up their spare time.

The previously announced VK Beru Team finally emerged as: Barry VK2BJ, Vlad VK2IM, Les VK4BUI, John VK4EMM, Alan VK4SN, George VK4XY, Alan VK6BN, Mirek VK6DXI, John VK6HZ and Alan VK8AV.

However, as the news of the horrors emerging from Japan became known, contesters were asked to keep key frequencies clear for JA emergency communications on: 3525, 7030, 7043 and 7075. From the little I heard, the bands were not very kind to Beru, with 10 m being mute most of the time and 40 m also being fussy via either pole to the UK. The Canadians were showing a heavy presence on the bands however, with VE appearing wherever the VFO came to rest.

VK Team Captain John VK4EMM, managed to snare just over 530 QSOs, while Alan VK3SN bagged 150 QSOs in his limited time on the rig. Vlad VK2IM also logged just over 500 QSOs, reporting 400 QSOs in the first 10 hours or so, and then the rate dropping somewhat for the remainder of the contest. Mirek VK6DXI worked 400 stations in the 14 hours that he managed to stay awake. George reports logging just under 250 QSOs and some reasonable propagation – glad to see that someone got some!

Ah well – maybe I will play in Beru in 2012 if all goes well.....

John Moyle Field Day Contest

As I write this section, it is the week following the John Moyle contest. I spent the Moyle weekend trying to get ready for the WPX SSB contest this coming weekend. It would have been time better spent if I had taken the weekend to build an Ark instead. From the Friday evening until the Sunday afternoon, the station was either being pelted with rain, or Mother Nature was thinking about soaking us with rain and sent low cloud instead until the rain clouds turned up. As a consequence of this blatant disregard, I got seriously soaked doing the preparation work. However, at least I could scamper away to the shack and seek solace in the relative sanctuary thereof. Not so the hardy souls who had set-up a portable station out in the sticks. I worked a few such souls during the contest – but only VK4 seemed to be affected by damp weather! Stations in VK2 and VK3 reported sitting in open tents, enjoying beautiful sunny weather! It rained so hard in VK4, that I had reports from EU on 20 m saying that my signal had a strange noise being transmitted with it. The rain was so loud on the roof of the shack that I gave up in the end and went to see how Mr Boag was doing instead.

I hope that the John Moyle contest weekend went better for you than it did for me...

CQWPX SSB 2011

Did you get onto the bands for this one? As I write this part of this column, the sound of the contest is still ringing in my ears as it finished some four hours ago at the VK4KW station. Amidst the groans of ecstasy for prefix hunters and DXCC collectors alike, the WPX contest made the bands come alive – and we had some good conditions just for once! While WPX was designed as a DX contest, the prefix multipliers are equally valuable wherever they come from,

even one's own country. Of course, more QSO points are awarded for QSOs in other continents, but modest stations can feasibly make a very sizeable score if they operate most of the contest period.

WPX also emphasizes the low bands by awarding double points for QSOs on 80 and 40 metres compared to 20, 15 and 10 metres. Operating strategy for the WPX contests should take into account maximizing time on 80 and 40 as long as the QSO rate is at least half what could be expected on the high bands. The high bands are still important for multipliers that may not be on the low bands and for daytime QSOs of course. In practice, the 80 m band was largely ignored by most contesters however as the scoring for WPX negates much of LF being utilised because multipliers count only once for credit and are not on a per-band basis. Work VK4 on one band and that is it for the multiplier credit, for example. As a consequence, 80 m and 160 m see relatively little contesting activity during this particular contest – at least in this part of the world – as the higher bands tend to have more traffic and hence more multipliers. 10 m has been quite healthy as of late however – and the contest provided the opportunity to use 10 m to the full, with extensive openings to North America and Europe taking place over the two days of the contest. Some strange and exotic prefixes were in evidence during the contest, causing some logging software a headache no doubt.

Despite the troubles in Japan there were abundant JA stations during the contest, which is a credit to them considering the current circumstances within their country.

Russian DX Contest

The organisers of the RDXC have been tweaking the rules lately. In yet another bid by a major contest to put the squeeze on possible cheating, organizers of the Russian DX Contest have unveiled plans that tighten the rules on log submissions for top scoring entries and require the frequency of every contact to be in a log entry.

An applicant will not be able to claim a spot in the "Top 3" places of any category unless exact frequency of every QSO made is indicated, reads one new rule, an effort to require even more evidence for log checkers as they evaluate high scoring contest entries.

Top entrants will also now have only 36 hours to submit their logs after the contest ends - you read that right - not 36 days, but 36 hours. For most competitors in the Russian DX contest, there will now be a 14-day time limit on log submissions after a contest ends - this year that means no later than 3 April 2011.

The organisers wish to communicate to the world, that if you want to enter the contest at the highest echelon, then your entry must be without reproach. All logs at a certain level of achievement will be scrutinised extremely carefully and a declaration must be made by the entrant pertaining to the nature and facility of the station that was utilised to achieve the score submitted. All of this effort is to try and limit or even wholly remove the cheaters of this world from achieving a hollow victory.

The rule changes include:

- Any competitor who thinks he/she will be in the top three of any category, must have their log indicate the "exact frequency of every QSO made (CAT system use)
- Low Power and QRP entrants are now required to "clearly identify equipment used, as well as antenna types by band, ASL elevation, type and length of coax cable"
- Multi-Two entries must identify the number of each transmitter in the log for all contacts

Russian DX organizers are also moving into the 21st Century, as they officially have ended the practice of accepting logs that are hand written. Logs will now only be accepted in CABRILLO electronic format. Furthermore, QRP and Low Power entries must show exact station detail – including equipment, antenna per band, ASL elevation; type and length of coax.

So, why bother and what impact will it have? What serious competitor does not use computer logging? What serious competitor does not have the computer tracking frequency so as to switch filters and antennas? Given the reverse beacon network, a station claiming to be running low/QRP power on CW can be tracked almost continuously throughout the contest. Given antenna, transmission line and elevation information, a model can be created so the low/QRP power station can be compared to relatively nearby other stations. If one station's signal is received consistently better at various RBNs, adjusting for what the model predicts, that is a strong indication that they may not actually be running low/QRP power.

This approach could be considered to be a strong deterrent to claiming low/QRP power when QRO.

As always, there is another side of the coin, aside from the fact that the current technology for RBNs only covers CW signals. Many social studies have shown that it is human nature to cheat, especially when:

- the visibility (the chance to get caught) is low
- the penalties for getting caught are low
- the perceived personal advantage to benefit from cheating are high
- the perceived harm to others is low
- the perception exists that others are also cheating
- somebody feels that by cheating they are merely compensating for some other situational disadvantage or unfairness in the rules

Virtually all of those conditions exist in amateur radio contesting and there are lots of people in this world who really do not care what 'others' think of them as long as they are able to claim they "won". Following the rules (i.e. honesty) is not the universal behaviour that some folks would like to pretend it is, and there are countless examples from real life to prove it, such as employee time clocks, tax return audits, cameras at traffic stop lights, showing tickets at the gate of an event, etc. Those are not measures taken to regulate a few renegade cheaters – they are measures taken to prevent any one of us from cheating.

Humans have an incredible ability to rationalise their own bad behaviour, and many do it repeatedly.

There has been an unfortunate trend that has worked to diminish fun for some as ham radio operators. Previously it had manifested itself in DXing, with some operators claiming to be on certain islands or in certain countries, yet thousands of miles distant in actuality. And now, sad as it seems, this trend has permeated its way into the world of contesting. Some call it Radio Sporting, but for some it is much more than a sport. To the good fortune of the serious contester, the great majority play by the rules. But, a few seemingly must win at any cost. One can only wonder what they imagine they think that they have won when they receive the certificate afterwards.

Twenty years ago (so I am informed by others as I am *far* too youthful to know by direct knowledge) the WRTC endeavoured to level the playing field, even taking the radical step to have 24-hour referees so as to try ensuring that all play by the rules. This approach has been practised for quite some time, as any ex-patriot 'G' operators may know, as the Region 1 VHF/UHF National Field Day (for example) has been subject to occasional visitations of an official nature at contest sites to check that the rules are indeed being obeyed as claimed by the entrant. Some RSGB events also have this scrutiny facility in place within the contest rules.

A couple of years ago, Al 4L5A/D4B, believing so strongly in the integrity of our sport, put his money where his mouth was and dug into his own wallet to 100% finance some referees to cover three CQ WW CW SO/AB operations, all competing for world-high from the DX-end. Unfortunately, Al's efforts resulted in more recriminations, more misconceptions and was not executed well in some cases.

Radio contesting has become a different animal over a period of time. Some accredit this to the use of technology (some people still see the use of the PC as 'cheating') but computers, Skimmers, RBN, Packet etc is all here to stay – like it or not. It cannot be uninvented.

However, with new technologies and "skills", I suspect that for contesting to have any meaning, it must be done with integrity. Without that, it may be the case that its future will be sadly limited or even cast aside.

2010 IARU HF World Championship Results

Congratulations to the following VK stations appearing in the results listing for the contest.

VK4AN	26,158	SO, LP, Mixed
VK3DLI	25,075	SO, LP, Mixed
VK2APU	24,920	SO, LP, Mixed
VK5TX	13,237	SO, LP, Mixed
VK4XES	1,955	SO, LP, Mixed
VK3TDX	456,048	SO, HP, Mixed
VK7ZE	105,984	SO, HP, Mixed
VK3IO	101,380	SO, HP, Mixed
VK4LDX	5,720	SO, LP, Phone
VK4GH	17,507	SO, HP, Phone
VK2GR	35,165	SO, LP, CW
VK3FM	22,101	SO, LP, CW
VK4TT	17,056	SO, LP, CW
VK4EMM	357,555	SO, HP, CW
VK7GN	135,744	SO, HP, CW

Channel 'Rights'

Does this following scenario ring a bell? You are trying to winkle out some desperately weak caller when someone calls 'QRL?' a bit off frequency and just the once. You treat it as a bit more QRM and then the station then starts CQing and will not go away when you protest - you are in a frequency 'fight' before you know it, or even did anything to deserve it. I have had the case a number of times when I have not left the frequency but rather have stopped to listen to a weak and / or slow station replying to me or repeating something for the n^{th} time and have then had to make the decision whether to lose him by sending AS (wait) or (QRL) in response to a 'QRL?' over the top of the station therefore abandoning reception. What normally happens is that I tend to continue to listen and then the person who asked 'QRL?' does not hear him or me and therefore starts calling. Generally, a double check of the frequency is in order and some humility if you do not hear the guy immediately reply 'YES', or possibly 'RR'.

From the other guys point of view, a station calls CQ on frequency 'A' and works a few stations, then spots a "new" one on a second S&P frequency 'B' and works that one. This is the moment where you call 'QRL?' on frequency 'A', but he is busy repeating his serial to the other station on 'B'. He finally finishes the QSO and returns to "his" CQ spot only to find you happily occupying the frequency.

Another explanation might be that many of the serious operators will be using directional Rx antennas, so if the station who was originally occupying the frequency has switched to a long Beverage that is pointing away from you he probably will not hear your QRL or CQ.

With SO2R/SO2V you take a risk and must, I suppose, accept the consequence if / when you lose your place on the band!

BARTG Changes

More changes are occurring at BARTG. Phil GU0SUP has had to relinquish his post as Awards Manager due to personal circumstances. Phil did a great job for BARTG and has been a huge ambassador for RTTY. He says he will try to support the contests as and when time allows. Chris Plummer G8APB has taken Phil's place. BARTG is now mainly a Contest/DX sponsoring web- based group and they sponsor various DXpeditions, encouraging Data operations. BARTG are also looking for Sponsors for some of their major awards/trophies. If you wish to Sponsor an award or trophy, write to Chris, G8APB at *plummerc42@hotmail.com* Sponsorship can be a great way to commemorate an SK Ham, dedicating their name onto an award for an activity close to the heart of the namesake.

If you have any contest related material for inclusion within the column, topics that you would like covered or even some experiences and pictures you would like to share, then please feel free to get in touch via *vk4baa@wia.org.au* See you on the bands.

73 de VK4BAA

Winter VHF-UHF Field Day 2011

John Martin VK3KM, Contest Manager

Saturday and Sunday 18 and 19 June 2011

Duration in all call areas other than VK6:
0200 UTC Saturday to 0100 UTC Sunday.

Duration in VK6 only:
0400 UTC Saturday to 0400 UTC Sunday.

Sections

A: Portable station, single operator, 24 hours.
B: Portable station, single operator, 8 hours.
C: Portable station, multiple operator, 24 hours.
D: Portable station, multiple operator, 8 hours.
E: Home station, 24 hours.
F: Rover station, 24 hours.

Operating periods: Stations entering the 8 hour sections may operate for more than 8 hours, and nominate which 8 hour period they wish to claim for scoring purposes.

Entering more than one section: If a portable station operates for more than 8 hours, it may enter both the 24 hour and 8 hour sections. If the winner of a 24 hour portable section has also entered the corresponding 8 hour section, his log will be excluded from the 8 hour section.

If a portable or rover station spends part of the contest period operating from his home station, he may also enter the home station section.

Two operators: If two operators set up a joint station with shared equipment, they may choose to enter Section A or B as separate stations under their own callsigns, or Section C or D under a single callsign. If they enter Section A or B, they may not claim contacts with each other.

Multi-operator stations: Portable stations with more than two operators must enter Section C or D. Operators of stations in Section C or D may not make contest exchanges using callsigns other than the club or group callsign.

Rover stations: The Rover section is for all portable or mobile stations that operate from more than two locator squares or change locator squares more than twice.

General Rules

One callsign per station. Operation may be from any location. A station is portable only if all of its equipment is transported to a place which is not the normal location of any amateur station. Portable stations may change location during the Field Day provided the station is dismantled and reassembled each time it moves. You may work stations within your own locator square. Repeater, satellite and crossband contacts are not permitted

Except for CW, no contest operation is allowed below 50.150 MHz. Recognised DX calling frequencies must not be used for contest activity. Suggested procedure for SSB stations is to call on .150 on each band, and QSY up to make the contest exchange.

Contest Exchange

RS (or RST) reports, a serial number, and your four digit Maidenhead locator. The Maidenhead locator is optional if it has already been exchanged in a previous contact during the Field Day and neither station has moved since then.

Repeat Contacts

Stations may be worked again on each band after three hours. If either station is moved to a new location in a different locator square, repeat contacts may be made immediately. If the station moves back into the previous locator square, the three hour limit still applies to stations worked from that square.

Logs

Logs should cover the entire operating period and include the following for each contact: UTC time; frequency; station worked; serial numbers and locator numbers exchanged.

Scoring

For each band, score 10 points for each 4 digit locator square in which your station operates, plus 10 points for each locator square worked, plus 1 point per contact. Multiply the total by the band multiplier as follows:

6 m	2 m	70 cm	23 cm	Higher
x 1	x 3	x 5	x 8	x 10

Then total the scores for all bands.

Cover Sheet

The cover sheet should contain the names and callsigns of all operators; postal address; station location and Maidenhead locator; the section(s) entered; the scoring table; and a signed declaration that the contest manager's decision will be accepted as final.

Please use the following format for your scoring table. In this example the operator has operated from one locator and worked four locators on each band:

Band	Locators Activated (10 points each)	+	Locators Worked (10 points each)	+ (1 point each)	QSOs	x	Multiplier	=	Band Total
6 m	10	+	40	+	40	x	1	=	90
2 m	10	+	40	+	30	x	3	=	240
70 cm	10	+	40	+	20	x	5	=	350
etc.									
Overall Total								=	680

A blank cover sheet, with scoring table, is available on the Field Day page of the WIA web site.

Entries

Paper logs may be posted to the Manager, VHF-UHF Field Day, 3 Vernal Avenue, Mitcham, Vic 3132. Electronic logs can be e-mailed to vhf-contests@wia.org.au. Acceptable log formats include: ASCII text, RTF, DOC, DOCX, XLS, MDB, PDF, or any Open Document format. Logs must be received by **Monday, 4 July 2011.** Early logs would be appreciated.

Field Day Web Site – *http://www.wia.org.au/members/contests/vhfuhf/*

This site includes the rules for the next Field Day, rules and results of all past VHF-UHF Field Days, cover sheets and scoring tables, and other information.

Ross Hull Memorial VHF-UHF Contest 2011: Results

John Martin VK3KM, Contest Manager

Here are the results for the 2011 contest. The number of logs continues to be small, but this year's entrants have shown that it is possible to make up very healthy scores in several different ways.

Most noteworthy is the fact that after some years of low activity in VK6, we have a VK6 winner for the first time since 1984. Congratulations to Barrie Burns VK6ADI. In second place came Ted Thrift VK2ARA. Barrie and Ted have both shown what can be done with some enthusiastic operating on 6 metres. We may be only at the start of the next solar cycle, but 6 metres is certainly alive and well.

Coming third in Section A, Wayne Pearson VK5APN has accumulated the top 2 metre score with EME contacts. Top score on 1296 went to Kirk Mercer VK2MER, and Peter Freeman VK3PF gained a very healthy score on the higher bands.

In the digital modes section, the winner this year was Phil Moat VK4CDI with a mixture of terrestrial and EME contacts to 11 countries. He is followed by Rex Moncur VK7MO with a very healthy log of mostly terrestrial contacts.

Congratulations to all.

Ross Hull Contest 2011 Results

Call	Name	50 MHz	144 MHz	432 MHz	1296 MHz	2.4 GHz	3.4 GHz	5.7 GHz	10 GHz	TOTAL
Section A:	**All Bands**									
VK6ADI	Barrie Burns	5226	48	45	-	-	-	-	-	5319
VK2ARA	Ted Thrift	2772	360	235	-	-	-	-	-	3367
VK5APN	Wayne Pearson	-	2310	-	-	-	-	-	-	2310
VK2AH	Brian Farrar	972	783	220	-	-	-	-	-	1975
VK2MER	Kirk Mercer	188	618	520	152	-	-	-	-	1478
VK2TG	Robert Demkiw	1110	312	10	16	-	-	-	-	1448
VK3HY	Gavin Brain	726	279	305	80	-	-	-	-	1390
VK7MO	Rex Moncur	-	816	265	154	-	-	-	140	1375
VK3FEMT	Stewart Wilson	-	831	455	-	-	-	-	-	1286
VK3PF	Peter Freeman	98	210	170	320	120	80	80	170	1248
VK3UH	Ken Brown	-	48	35	16	-	-	-	-	99
Section B:	**Digital modes, All Bands**									
VK4CDI	Phil Moat	-	960	580	9610	-	-	-	-	11150
VK7MO	Rex Moncur	-	2137	75	2569	-	-	-	-	4781
VK1WJ	Waldis Jirgens	-	254	-	-	-	-	-	-	254

Don't forget

18-19 June Winter VHF-UHF Field Day

VHF/UHF – An Expanding World

David Smith VK3HZ
vk3hz@wia.org.au

Weak Signal

Early in March, there was some interesting propagation across the south of the country.

On the evening of 2 March, both Phil VK5AKK and Brian VK5BC reported hearing the VK6REP 2 m beacon in Esperance at 5x1-2. Phil also heard the beacon the following evening and on the morning of the 4th, although no contacts were forthcoming. Finally, that evening at 0922 Z, he worked Wally VK6WG in Albany at a good 5x7 on 2 m and 5x9 on 70 cm over a path of nearly 1900 km.

Meanwhile, on the morning of 4 March, conditions picked up between Adelaide and VK1 / 2. At 2214 Z, Col VK2BCC worked Jeff VK5GF on 2 m at 5x1 over nearly 1100 km. Multiple contacts occurred on 2 m between Jeff VK5GF, Phil VK5AKK, Brian VK5BC, Bill VK5ACY and Chris VK1DO, Rob VK1KW, Ian VK1BG, John VK1CJ. Phil VK5AKK also worked Ian VK1BG on 70 cm with a 4x1 report. At times, signals on 2 m rose above S9 and Jeff VK5GF reports being able to work into the VK1RGI repeater with a vertical omni.

On the morning of 6 March, there were some unusual conditions up the coast of NSW. At 2125 Z, Chris VK1DO worked Adrian VK4OX on 2 m at 5x4 SSB and 529 CW over a distance of 1015 km. Over the next 15 minutes, Chris then went on to work Rod VK4ARN and John VK4JMC in what was presumably a tropo opening.

March 17 brought a high level of meteor activity. At 2126, Jim VK3II worked John VK4JMC on 2 m SSB at 5x8 via a long MS burn. Brian VK3BBB also worked John. Norm VK3DUT just failed to complete a QSO with John, losing him at the end.

Aircraft Enhancement Activities

Jim VK3II located near Phillip Island always has good results via aircraft enhancement (AE) into the Sydney area and beyond. This seems to be due to both his excellent takeoff and favourable alignment of the path with the Sydney to Melbourne aircraft routes. As with real estate, in the AE game it is mostly about location, location.

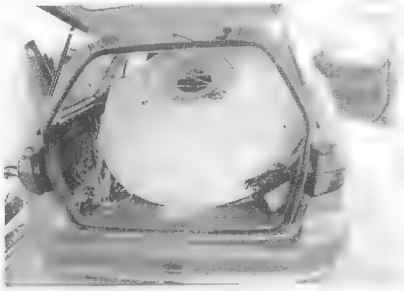
During the AE net that operates on 144.2 MHz from 8 am to 9 am local time of a morning, Jim features highly in the list of stations worked. On a recent morning (April 1), he reports working VK1CJ, VK1BG, VK2BCC, VK2BXT, VK1DO/M, VK3AJN and VK3BJM. In addition, he worked VK7MO on 144.225 MHz JT65a and had tropo SSB contacts on 144.1 MHz with VK3AIG and VK5ZK.

Jim reports on a good recent contact:

I had an unusual AE 2 m SSB contact with Ron VK4DD and Ron VK4CRO on Saturday morning 25 February from my home QTH (QF21RN). They had stopped at Snapper Point south of Newcastle QF56TT at a sightseeing location on their way to Wyong (see picture). They were running 250 W into a 4-element Yagi mounted on the car. The SSB signal peaked to 5x3 over a distance of about 800 km. They commented that it was great fun being mobile and portable with the car and agreed that next year they would be mobile again on 2 m SSB while driving to Wyong.

Just before this I had worked Chris VK1DO mobile. Not sure where he was, but presumably on his way to work in Canberra.

Ron VK4DD and Ron VK4CRO portable near Newcastle.



ZL1TPH/P ready to roll.

ZL1TPH Portable Setup

Further to the report a few months ago about the excellent work by Steve ZL1TPH working VK9NA and across to mainland VK on 2.4 GHz from his portable location, I received a picture of Steve's portable setup packed into his vehicle. To say it looks a tight fit might be understating things a little!

Please send any Weak Signal reports to David VK3HZ at *vk3hz@wia.org.au*

Digital DX Modes

Rex Moncur VK7MO

VK2KU qualifies for Digital DXCC on 144 MHz

Congratulations to Guy VK2KU on being the first VK to work 100 countries on 144 MHz and qualify for DXCC. Guy provided the following report:

DXCC is a good award because it is eminently achievable, especially on the HF bands. When I began playing with EME in late 1999, the only mode was CW except for SSB with super-stations. A DXCC on 2 m is of course only possible using EME, but for an ordinary station to achieve this on CW is an almost impossible dream. The arrival of the WSJT Digital modes (JT44 at the end of 2002 and JT65 four years later) changed all this, and DXCC became a real possibility.

The first award to which EME stations aspire is WAC (Worked All Continents), not trivial with the lack of stations in some continents, but not hard either. At the other end of the scale of difficulty lie the American WAS (Worked All States) and the Australian WAS VHF awards; these are particularly difficult on EME because you have to work all 50 American States, or all 8 prefixes VK1 to VK8 in Australia, and there just are not the necessary EME stations in some states. DXCC is easier than those awards because you do not have to work them all, just 100!

I now have 21 DXCC entities on 2m EME CW, but I have also worked all of those again using the Digital modes. So it has taken from December 2002 to March 2011, rather more than 8 years to work the magic 100 entities or "countries" on 2 m Digital EME. Of course the first countries worked were the easy ones: the USA, Germany etc, and all of those early countries have been worked again many times since, up until Cyprus 5B in January 2005. I have not worked Cyprus again, so in one sense the 100 countries have taken only six years or so. The 100th was HL5QO in March 2011.

The first 50 come fairly easily and steadily. These are the countries with at least several resident EME stations, sometimes dozens. The next 30 are harder because where only one or two stations operate regularly in a country, they often have only one or two Yagis and quite modest power. They may also live in RF-noisy cities, creating serious problems of deafness! VK was once quite a rare country on 2 m EME, but we now have enough regular stations to have met most of that demand. Above 80 countries you are relying more and more on EME expeditions to rare countries, usually well equipped, but with limited time and very much in demand with the corresponding pileups. The last 10 come quite slowly and consist almost entirely of such expeditions with the occasional resident station like HL5QO, my 100th. It is a great feeling to have made it at last, though I still have a few QSLs to collect. They say that the next 10 actually seem easier! It is also time I worked some more CW EME, which has its own special satisfaction.

ISCAT for microwave Aircraft Scatter

Rex VK7MO and Dave VK3HZ have been experimenting with digital modes for aircraft scatter at 10 GHz. They are using around 7 watts to 65 cm dishes. While the WSJT mode JT65c works well for aircraft that cross at angles of up to 10 or 15 degrees, at greater angles the variation of Doppler (more than 40 Hz per minute) becomes too great for WSJT to follow even with AFC. It has been found that for larger crossing angles the new ISCAT mode in WSJT9 works well and can cope with Doppler variations of up to 1000 Hz per minute as occurs at 10 GHz when jet aircraft cross at right angles.

While ISCAT has an averaging feature that works to around -17 dB (on the WSJT scale) it has been found that at 10 GHz aircraft scatter comes in short bursts of a second or so and that non-averaged decoding by clicking on the waterfall produces better results even though it works to only around -10 dB. On shorter aircraft scatter paths such as 450 km the bursts of signal can peak at +5 dB and even on long paths of 700 km peak signals of -2 dB have been measured – albeit for only a fraction of a second. Good decodes can still be obtained on weaker bursts down to -10 dB on longer messages such as two callsigns and a report and -12 dB on short messages such as RRR. For aircraft crossing near at right angles it is found that an aircraft produces only one or two bursts of a second or so duration but these still decode well through clicking on the waterfall – but it does take some practice to learn the operating procedures and react quickly when a burst of signal is detected.

ISCAT provides for TX/RX periods of 30 and 15 seconds as selected by clicking on the box near the centre at the bottom of the WSJT 9 window. It is recommended that 15-second periods be used for microwave aircraft scatter as this potentially allows a QSO to be completed on a single aircraft crossing as has been achieved with aircraft crossing at 30 degrees. At larger crossing angles it will usually be necessary to use multiple aircraft but still the faster TX/RX period is an advantage.

New 10 GHz digital record

On 11 March Dave VK3HZ operating portable from Andy VK3ES's property on the north side of Mt Macedon and Rex VK7MO operating portable from near Peterborough, South Australia achieved a new 10 GHz digital record of 715 km. The QSO was achieved using ISCAT on aircraft crossing at between 65 and 75 degrees on either the Sydney-Adelaide or Adelaide-Sydney flights. Signals peaked at -2 dB. It took bursts from 5 separate aircraft over 90 minutes to complete the QSO and some produced no signals at all.

Please send any Digital DX Modes reports to Rex VK7MO at *rmoncur@bigpond.net.au*

The Magic Band – 6 m DX

Brian Cleland VK5BC

March proved to be a very interesting month on 6 m with many TEP openings from VK4, northern VK6

and VK8 to Japan, China, Hong Kong, Philippines, Korea etc. The highlight of the month being a contact between Wade VK4WM and UX0UN in Ukraine.

Wade VK4WM in Hervey Bay reports on his contact with UX0UN:

On the 25th I had just finished working Hide JR6EXN when Nick UX0UN called me and gave me RST 559 but when he put it back to me there was really quick QSB on his signal that made it hard to read his callsign and I was expecting a JA callsign, I managed to send him his report of 419 but after he repeated his callsign a couple of times he disappeared, I still thought he was a JA however looking at what I had written down, it leapt off the paper at me who he really was! His email got to me before I found his address on QRZ.COM, it was a genuine QSO, and QSLs are in the mail!

Congratulations Wade, both Wade and Nick were running 100 W, Wade was using a 6-el on a 6 m boom YU7EF design Yagi and Nick was using G0KSC 7-el on a 9.5 m boom Yagi. Wade's complete log summary for March is as follows:

05/03/2011	05.24 - 07.24 Z	JA stations 4 x SSB, 22 x CW
06/03/2011	04.54 - 07.00 Z	JAs 44 x CW
08/03/2011	07.04 - 08.03 Z	JAs 20 x CW
10/03/2011	04.21 - 07.00 Z	JAs 22 x CW
13/03/2011	04.04 - 04.38 Z	JAs 6 x CW
15/03/2011	04.50 - 06.01 Z	JAs 22 x CW
17/03/2011	04.36 - 06.37 Z	JAs 4 x SSB, 2 x CW
23/03/2011	05.16 - 0624 Z	JAs 14 x CW

25/03/2011 05.00 Z 50.100 MHz CW
Hide JR6EXN S 519 R 559

25/03/2011 05.03 Z 50.100 MHz CW
Nick UX0UN S 419 R 559 KIEV UKRAINE KO50fk 14,427.83 km

27/03/2011 10.13 - 10.44 Z CW JA1QOP S 559 R 599, JK3HLP S529 R 539, JA2BNK S559 R 559.

The band was open on many days in March from VK4 to the various areas of Japan with openings extending south to Brisbane to Cairns in the far north. There were reports of 60 – 70 JAs being worked in an opening and Dale VK4SIX in Atherton reports that Charlie VR2XMT in Hong Kong could be heard and worked on many evenings. Willem DU7/PA0HIP was also regularly worked in VK4 along with several Chinese stations.

David VK5AYD in Coober Pedy northern VK5 has also been enjoying good conditions and reports the following:

04 Mar 2011 VK4s FNQ, EK, XGE, NPF, on SSB 50 MHz and 52 MHz and the last two on 52.525FM as well.... Plus VK4 beacons, RHT, RTL, RGG
05 Mar 2011 26 x JAs 0 - 9 areas plus a surprise call from Joel KG6DX
06 Mar 2011 9 x JAs 1,2,7,8 and 9 areas
08 Mar 2011 11x JAs 1,2,3,5 and 6 areas
10 Mar 2011 Nothing worked but heard JAs working VK4s SSB and CW
13 Mar 2011 13 x JAs 0, 1, 2, 3 and 8 areas, finished off with Marc VK8MS, pipeline to Darwin
15 Mar 2011 JA2IGY Beacon + plenty of JAs on SSB and CW, worked none
17 Mar 2011 DU7/PA0HIP Willem, 5x9 best contact so far with Willem, HL2KV Mike on CW 559 both ways
20 Mar 2011 5 JAs 0, 7 and 8 areas
24 Mar 2011 Weak JA0 on 50.110 heard only
27 Mar 2011 4 JAs 1 and 3 areas, Rx JA6 only, M/s pings from VK5s ZK and PO, couple of good long burns

Further south in VK5 JAs were worked on 12 March with Garry VK5ZK and Brian VK5BC working JA6WJL and JH6CDI, Brian also worked JP3WAU. A little after the JAs at 0838 Z Brian VK5BC worked BA4SI. This opening to China also extended to VK7 where Frank VK7XX, Norm VK7AC and Laurie VK7ZE also worked BA4SI. Then on 26 March a good opening which started around 0745 Z and lasted for approx three hours, John VK5PO worked all call areas except JA8 and 9 on CW. Brian VK5BC also worked JA6UOU 59 SSB early in the opening. Although JA beacons were being heard unfortunately there did not appear to be many stations active either end.

There are now several active stations in the Pilbara area of NW VK6 including Michael VK6BHY and Rod VK6KP (home call VK3TG) in Karratha, Steve VK6HV in Wickham and Rex VK6ARW in Exmouth. They have all been making the best of the good conditions to the north during March.

Rod VK6KP who working in the Pilbara on a two year term is using a FT-897D and 4-el Yagi reports the following:

March has been excellent.

Late morning you start to hear JS2IR on 43.650 and the MUF slowly rises until 49.750 comes alive with many signals. These build up and most late afternoon 50 is full of "birdies".

Typical pattern - around 0700 to 0730 Z mid to late afternoon opening to JA. Most days the TV is there but not all the time. Gradually drops away and then reappears in force anytime around 1100 Z onwards. These evening openings last many hours and can still be open up to 1500/1600Z.

TEP flutter is there especially with Willem (DU7/PA0HIP) and Charlie (VR2XMT). Over the last week or so Charlie has been heard almost every night.

The most consistent JA beacon has been JA6YBR 017. It can be heard nearly everyday at the moment. JA2IGY 010 is there most days but not as often as YBR. I have heard JR6YRG a few times which is promising.

On a few occasions I have heard DU1EV on 008 up to S5.

From Rod's log:

01/03/2011 1126 Z BV2JD 5/5 followed by a few JA6s through to 1240Z.
05/03/2011 0720 Z - 0800Z 38 JAs 1, 2, 3, 4, 5 and 6 on CW and SSB mostly S9+.
07/03/2011 0930 Z - 1325Z JAs 1, 2 and 6 plus JA6YBR/B.
08/03/2011 1117 Z - 1140Z JAs 1, 2, 3, 5 and 6.
1155 Z BA4SI 50.110 5/5 SSB
1210 Z BA4SI 50.120 599 CW
1223 Z VR2XMT 50.110 5/8 SSB
09/03/2011 1033 Z - 1103Z JAs 1, 2, 4 and a number of 6s (YBR/B S9+)
1306 Z VR2XMT 50.110 5/7 SSB
10/03/2011 1243 Z DU7/PA0HIP 50.110 599 CW
13/03/2011 0600 Z - 0842Z Massive JA opening all areas and all Sigs 9+ (Like the good old days!!) Huge QRM! Did remember

from years gone by to ask the JAs to standby and QRZ outside of JA! Sure enough at 0657 Z HL1VAU 50.130 59+ SSB.

15/03/2011 0430 Z – 1330 Z JA beacons and few JAs not strong.

16/03/2011 0730 Z – 1230 Z JA beacons IGY/YBR and YAG all in at varying times up to S9. Some JAs around.

18/03/2011 1300 Z VR2XMT 50.110 5/5 SSB

19/03/2011 0623 Z – 0634 Z DU7/PA0HIP 50.110 5/7 SSB and a few JAs 1 and 2.

All of the above were worked using a three element Yagi at 6.5 m fixed to the north. Gear FT-897D or FT-625D with amp.

Rod now has a 4-el Yagi.

A little further south Rex VK6ARW is active from Exmouth who has also enjoyed some good conditions and reports:

06/03/2011 I had 4 QSOs with JA stations between 0710 – 0730 UTC.
21/03/2011 at 1208 UTC VR2XMT in Hong Kong.
24/03/2011 at 1230 UTC VR2XMT, JR6EXN, DU7/PA0HIP
26/03/2011 at 11:30 JR6EXN and on
27/03/2011 at 09:44 UTC JE6EZU.

Rex is using an IC-7000 and a Moxon antenna.

Great to see so many stations active from Northern VK6.

During March there was a new release of VKLogger. January is a busy month on the air and online! With a high number of simultaneous users (140+), VK Logger crashed the shared-server it was hosted on. Since then, VKLogger has been redeveloped, and now includes an integrated chat feature. Appearing to be running much quicker, VK Logger also includes some new feature such as the ability to enter WSPR and Radar reflection spots, and features for quick checking of other band loggers, DX clusters etc. Although it is still settling in, it appears to be an improvement on what was an already valuable tool for VHF operators.

Because of the Logger's server crash in January, temporary restrictions were placed upon idle chat, and other sites became available to carry out general chat. One of these sites is the ON4KST 50MHz IARU Region 3 chat site, where there is often some international stations reporting 6 m conditions which can be of value when openings to overseas countries occur.

However, unlike chat sites, VK Logger users can post propagation information, known as "spots". This information remains useful long after the bands have closed, where the historical information gathered can be used to help predict openings and identify windows of opportunity in the future. This data also demonstrates to the authorities that amateurs are actually engaged in propagation experiments, justifying their spectrum allocations, and not just idle Internet chatter requiring no bands at all.

Testament to the value of collecting local and relevant propagation data was made by Roger Harrison, VK2ZRH, who recently produced a paper "A new model of VHF sporadic E propagation". This is a very interesting paper, in which Roger used data from VK Logger to help form the basis of his conclusions. The short-form of this paper can be read on the VK Logger Discussion Forums in the "Propagation and Solar Cycle News" forum. Stay tuned to *AR*, as the full paper will appear in a future issue.

VK Logger now enjoys a better hosting arrangement, where the previous disk space and limited monthly bandwidth restrictions should no longer be an issue, even during the peak times.

In some late news band opened from Perth area to JA on 31st March. John VK6JJ, Andy VK6OX and Graham VK6SIX working several JAs, the first opening to Perth from JA for over 12 months.

Please send any 6 m information to Brian VK5BC at *briancleland@bigpond.com*

VK2news Continued from page 31

Ten **ARNSW** members are undertaking the course being conducted at VK2WI on Monday evenings. It is being run by Terry VK2UX, ARNSW Education Officer and will continued until about September. At the close of nominations for the committee of ARNSW there were eight nominations for the nine positions, so a ballot was not required. The AGM was held last month, with a report next month. The various reports for the AGM were either posted or emailed round the end of March. A bit disturbing was the high number of rejected emails where members had changed addresses without notification.

If you have made any recent changes – either email or postal - please advise ARNSW at *membership@arnsw.org.au*
Likewise remember to advise the WIA and your local club of such changes. At least to the sender - an email is cheaper than snail mail. Alternatively, you can leave a message on the office phone
02 9651 1490. There are also many changes of callsigns and these should also be notified.

73 Tim VK2ZTM

ALARAnews

Margaret Blight VK3FMAB – Publicity Officer

Autumn brings the season of White Elephant Sales and Ham Festivals as well as some welcome changes in weather. This offers the opportunity to not only meet and greet your own Club's members but the added advantage of travelling to other locations to participate in neighbouring club activities. I have observed it is never difficult to begin a conversation with another Ham.

On one such occasion recently, I was delighted to find the OM finally managing to participate in the selling of some long held radio parts and accessories. In fact a trailer load was taken to the EMDRC sale from our residence. A small miracle! It is now possible to walk, with care, the full length of the radio shack. One can only hope this is the start of better times to come.

I came upon the following comments recently and thought readers might find it interesting although, perhaps, some of the thoughts may cause a bit of a hummphing from certain quarters. Nowadays of course there are many women operators, but they seem to be able to multitask with ease as well as spend time on the radio. But, after all, the piece may indeed be a little 'tongue in cheek' and a little bit of fun. There may also be some understanding nods over the contents from other YLs who have a ham at home.

The care and feeding of your pet ham

Laura Sargent

The pet ham is one of the most intelligent of pets, often seeming almost human. BUT he can also be one of the most difficult to keep. Only a person with a great deal of patience and understanding should attempt to keep a pet ham.

The following is a short guide to some of the most important things that you should know about caring for your pet ham.

1. **Living Area:** Your pet ham should have a private area of his own. An entire room if possible, where he will not be disturbed. He will spend many happy hours alone there with his collection of treasures, (boxes, wires, bits of metal, glass, paper, plastic, etc, that he will bring home regularly). He should be encouraged to confine his activities to his nest room in order to protect the rest of the house from his natural tendencies toward noise, clutter and making holes in the walls.
2. **Expenses:** Raising your pet ham can turn into an expensive hobby. But, unlike most pets, the pet ham can be trained to work outside the home for short periods and so bring in enough money to cover part or all of his expenses.
3. **Feeding:** The well behaved pet ham will be able to eat with the family on occasion. But he will usually feel more comfortable and secure if he can take many of his meals in the privacy of his nest room. It will be your responsibility to see that your pet ham is kept well supplied with food and drinks during the long periods of time that he will spend alone in the nest room.
4. **Housekeeping:** Pet hams can usually be trained to use the family bathroom.
5. **Obedience Training:** Most pet hams can be trained to respond to a few simple commands. The easiest for him is to 'sit' and 'speak'. Once your pet ham has learned these commands, he will sometimes practice them on his own for hours at a time.
6. **Health Care:** The pet ham is especially subject to minor irritations of the lower back and sore throat. The special CW breed tends to have a tired wrist rather than a sore throat. The RTTY version may suffer from tired and hurting eyes depending on his age and monitor.
7. **Travelling:** Your pet ham will gladly travel with you in the family car if he is allowed to bring some of the collection from his nest room. His favourite trips will be to places where he can associate with pet hams from other families.
8. **Breeding:** If you plan to breed your pet ham, you should do so as early as possible after you get him. As the pet ham matures he becomes more and more reluctant to engage in any activities not connected with his nest room collection.

(The author of this article is not a ham herself, but keeps one at her home).

SYLRA meeting in Finland 2011

Annika OH2HSJ

If anyone is visiting Scandinavia later this year they might plan to call in on the SYLRA Meeting to be held in Finland in August 2011.

SYLRA stands for Scandinavian Young Ladies Radio Association. A number of ALARA members have a reciprocal link with members of SYLRA through mutual sponsorship and news is exchanged regularly.

The next SYLRA meeting will be held in Finland 11.-14. August 2011. The meeting will take place in a small town called Porvoo (Borgå in Swedish). Porvoois. Finland's second oldest town.

People come from all over the world to see the Porvoo Old Town. The town of Porvoo has about 48,000 inhabitants. It is a bilingual town with about 33% of the inhabitants speaking Swedish as their mother tongue. Porvoo is just an hour's drive from the capital of Finland, Helsinki.

The program of the SYLRA meeting:

Thursday 11 August 2011
Arrival
Dinner (self paid)

Friday 12 August 2011
The SYLRA meeting 3-5 pm.
Grill party 6.30-10.30 pm.

Saturday 13 August 2011
There will be guided tours of Malmgard mansion and Rutumi mansion in the morning.
Lunch will be served at Rutumi mansion.
Then there will be a tour of the town of Porvoo with afternoon tea served at Haikko mansion before returning to Porvoo where Dinner will be served at 7-10 pm.

Sunday 14 August 2011
Leaving for home or for the expedition.

For more information about the meeting, accommodation and registration please visit *http://www.elisanet.fi/oh2hsj/sylra2011/*

News from VK2

Dot VK2DB

In January OM John and I travelled to Qld to see our son's new home, hidden by trees near the top of a hill, overlooking the Gold Coast in Ormeau - a brilliant radio spot. There is a separate flat under the house so we did not wake to grandchildren jumping on us and John was able to set up the radio without it being in the way.

We took a day to go visiting ALARA members. Daphne VK4IA and her OM Ken VK4KD invited us for morning tea and we sat and had a long chat on their verandah overlooking valleys of trees. Another great radio spot. After leaving Daphne and Ken we went further south to meet Pam VK4PTO and her OM Paul. Susan VK4ST who was nursing bandaged fingers after a nasty fight with the garden shredder was also there. Pam had invited us for a few finger foods. Finger foods?! A great feast more like it. The table was groaning but as well as we three dainty ladies we did have two men to fill.

Wyong Field Day:

Late in February it was the Wyong Field Day and as usual I took the ALARA table. Two of my sons Ben VK2BRB and Peter VK2ZCU carried all the bags and set up the banners and table for me. Then they went out looking and buying once the stalls had opened. To celebrate my 21 years of taking the ALARA table to the field day, I took a tray of 99 cupcakes and visitors to the table enjoyed them.

Nina DL2GRC / VK2INZ was over from Germany and sat behind the table with little son Benni – wonderful to see her again. In all there were 15 ALARA ladies visit the table, the best roll up ever. Catherine VK7LCB, she used to be VK6LCB, joined ALARA on the day and Leah VK2FREE took a joining form and had a chat. She has since joined. Another visitor who enjoyed a good chat was Pierce VK2APQ who turns 100 later this year.

Jean VK3VIP, Micheline VK3FMGE, and Margaret VK3FMAB at the EMDRC event.

I had advertising for the 2010 International YL meet in Adelaide with a calendar photo of the Ghan and it certainly generated a lot of interest, and questions. Agnes VK2GWI and I had a chat about holding the 2014 ALARA Meet in or around the Nelson Bay area. Agnes is going to be the coordinator and is already developing a program.

VK3 News

The EMDRC held its annual Elephant Sale on 13 March. ALARA members manned their table, selling a few items and fielding a number of enquiries, and also helped out in the kitchen dispensing numerous cups of tea and coffee. The outdoor barbeque catered by club members, did a good line in providing breakfast and snacks for the hungry. The task of cutting the onions fell to the willing kitchen helpers. Our worthy State Rep. Jean VK3VIP, had sobbed her way through three bags of onions, cutting them by hand, before Max VK3WT (who was manning the barbeque) produced a modern vegetable slicer. Thankfully, no further tears were shed.

The weather was very pleasant and the occasion provided an

Back row Left to right: Jean VK3VIP, Marg, Heidi VK3FHID, Ro VK3PLZ, Barbara VK3FBJD, Monica VK3FMON, Michele VK3FEAT,Marre VK3FSAT.
Front row left to right: Pat VK3OZ, Pam VK3NK, Elaine VK3EQY, Susan VK3UMM, Mary, Micheline VK3FMGE, Janet VK3BTU, Sally VK3FBND, Narre.

opportunity for a number of old friends to catch up and chat. The Sale was rated a success with the numbers up to expectations despite the fact it was a long week-end.

Several ALARA members and their OMs ventured into the City to try out a restaurant which had shown potential as a future venue for an ALARA bi-monthly lunch. **All in the line of research of course.** The restaurant is situated quite close to one of the Railway Stations on the City Loop which will be convenient for travelling. Everyone agreed it was a very pleasant meal and enjoyed the glass of wine included in the price of lunch. More about this later in the year. It is nice to know that the chosen venues have all passed the 'taste test' before everyone arrives for the formal ALARA Meal.

ALARA Lunch

The most recent VK3 ALARA lunch was held in Gisborne, hosted at the home of Pam VK3NK and OM Graeme VK3NE. The barbeque event was well attended with 26 ALARA members and their OMs. This number included a few first time attendees and it is hoped they will come to many more lunches. The weather was cool but fine. The food was delicious and plentiful. Popular opinion was that the Desserts were 'out of this world', with so many to choose from. A special Thank You for Pam who made the salads.

A very special entertainment was provided at the Gisborne Lunch by the Geri Buskers. This recently formed and enthusiastic group have come together to raise money for the Very Special Kids' Glen Osmond Farm at Woodend. It is hoped that eventually there will be up to four cabins and a barn designed to give families the opportunity to take short breaks in a relaxed, peaceful, rural farm environment away from day to day routine and the demands of care. The cabins will also provide families with full disability access and wonderful views of Mount Macedon and Hanging Rock. Activities will be structured around families being able to choose to get involved in all the Woodend area has to offer or just take time out for a complete rest.

Very Special Kids is a unique organisation that supports families throughout their experience of caring for children with life threatening illness from diagnosis through to recovery or bereavement. Many of these children have high medical care needs and sadly will not reach adulthood.

ALARA members are versatile

All the members of The Geri Buskers are radio operators.

Pam VK3NK performs on the Hurdy Gurdy, (which she constructed herself) with Janet VK3BTU on the Accordion (one of her instruments dates back to 1889) and Ro VK3PLZ on the Harp. We hope this unusual combo has great success in raising funds for such a worthy cause and continue to have a good time doing it.

Thank you to Pam and Graeme for opening your home up to us.

The AHARS ALARA members on the JMMFD. See below.

News from VK5

Five YLs joined other members of AHARS for the John Moyle Memorial Field Day this year.

In the picture above they are seen with Jenny VK5FJAY at the microphone. Behind her we have Christine VK5CTY, Janet, XYL to Kim VK5FNET, Diedre, XYL to John VK5EMI, and Tina VK5TMC who was our "hostess with the mostest" for the weekend.

The weather was almost perfect, warm and sunny under the tents with a small breeze as well.

The rain held off till we had packed up all the equipment and antennas and were sitting down to a barbecue lunch. When the rain came, though it came with a vengeance.

Special notation

Meg VK5YG has just been awarded a 'diamond' to acknowledge that she has been sponsored into YLRL for 25 years. Congratulations Meg.

The Geri Buskers in performance.

Meg VK5YG.

VK3news

Geelong Amateur Radio Club - The GARC

Tony Collis VK3JGC

The microwave set up on Barabool Hills for VK3UHF.

John Moyle Weekend

Whilst it has been customary for the GARC to field a number of teams at contest time, on this occasion it was a hybrid collection of operators from LUMEG, VK3ALB and VK3NW.

The location chosen was the one favoured by LUMEG in the Barabool Hills west of Geelong. It started out as a two man operation with Ken VK3NW and David VK3HQ operating as VK3UHF. They set up on Friday afternoon, as they usually do, covering all bands from six metres to 47 GHz.

On Saturday they had a visit from the VK3ALB team, resulting in Jenni VK3FJEN operating the six metre station for about three hours, and thoroughly enjoying her time operating. The weather was very pleasant throughout the duration of the contest, which added enormously to the overall enjoyment.

The 2 m band was open to Adelaide on Friday evening, but true to form was flat during the contest.

Jenni VK3FJEN and Ken VK3NW operating as VK3UHF.

There were some good contacts to central NSW on 2 m with the longest distance being VK2UH at 558 km and VK2WG at 429 km on 2 m and 70 cm. The team managed to work Adelaide station VK5AKK once on 2 m, at 604 km, but only one VK1 was worked and no VK7s.

A disappointing aspect from the weekend was the lack of microwave operators out.

The only contacts above 2.4 GHz were to VK5SR on 3.4, 5.7, and 10 GHz, at a distance of 328 km.

That being said, the overall score was around 20% higher than last year.

The GARC 2011 AGM

At the annual AGM, following the General Meeting, the following members were duly elected to the Club Executive Committee: Tony VK3JGC President, Jenni VK3FJEN Secretary and Andre VK3FASW Treasurer. In support of the above, four new committee members were elected: Lou VK3ALB, Greg VK3VOX, Carlo VK3BCL and Calvin VK3ZPK. The meeting also felt that in the light of recent health issues with certain of the membership, there was a need to appoint an Almoner (or a "We Care Officer") and Barry VK3SY was duly elected. Our gratitude to all the members responsible for all the other club activity posts for agreeing to continue as per the arrangements for the 2010 - 2011 period.

At the AGM handover to the new committee, the stand-in Public Officer Barry VK3SY stated that the outgoing President Dallas VK3DJ had made enormous progress in the organisational and procedural aspects of the club during his two year tenure, which was duly noted and applauded by the membership. The outgoing committee members Garry VK3FWGR and Kevin VK3FKEV were also thanked for their enthusiastic support during President Dallas' watch.

The Ray Cowling Award

The Ray Cowling Award is given to the GARC club member who is deemed to have contributed the greatest amount to amateur radio and the promotion of the Geelong Amateur Radio Club throughout the year. This year there was a landslide vote in favour of Jenni VK3FJEN.

Internet access

Our grateful thanks to Greg VK3JIY who has supplied and installed a 2.4 GHz link from his home along with router and WiFi hardware to enable internet access at the club house to members. This now also provides the Melbourne Wireless Group with a node, KMT.

Spotlight on **SWLing**

Robin L Harwood VK7RH

It is autumn at last and I have again been frustrated by a recurring hearing loss that has severely hampered my listening and monitoring. Fortunately I have kept in touch with others via the Internet especially with the extremely fluid situation in North Africa. As you may recall a revolt broke out in Tunisia earlier this year and quickly spread to Egypt, leading to the downfall of the Mubarak regime. Similar revolts broke out in other Middle Eastern nations. Some regimes nervously clamped down but the forces of change were not going to be easily subdued. In the case of Libya, a violent civil war broke out with the Gaddafi regime ruthlessly suppressing any dissent. This led to the imposition of a no-fly zone over Libya by the UN Security Council. Eventually NATO took over the enforcement of this operation.

Shortwave certainly was involved in this unrest across North Africa and the Middle East but it was the social networks such as Facebook and Twitter which were the principal means of communications. Several administrations attempted to disable Internet connections and cell phone networks in an effort to limit groups communicating. It is ironic that many major and minor broadcasters are doing away with shortwave radio in favour of the delivery via the Internet. As this ongoing crisis has demonstrated there is a continuing need for shortwave as a backup as regimes have shown that they can quickly shut down Internet connections.

The Libyan crisis also saw the re-emergence of psychological warfare via shortwave radio as it did almost a decade ago in Afghanistan. I remember hearing a signal with music and announcements in various languages on 8700 on USB which turned out later to be from a plane flying at high altitude. Again PsyOps were heard particularly in Europe on 6877 kHz on USB. This time announcements were in English, French and Arabic and with a warning for maritime vessels not to leave Libyan ports otherwise they would face dire consequences. It was an odd choice of frequency as it was not in the maritime allocation but within the aeronautical section and few, if any, sailors would have heard it. Presumably they would have also broadcast on the standard VHF marine channel 16 for the intended audience.

Libya became effectively split in two with the rebels controlling the eastern half of the nation whilst the pro-Gadaffi forces were in the west around Tripoli. Most of the radio warfare was monitored on medium wave and only audible within the region. The Libyan external service was broadcasting on 21695 prior to the civil conflict but has since been logged in the 16 metre band. They also oddly began to relay audio from the Tripoli TV station alternately on 8500 and 7500 kHz.

The American clandestine station in Arabic, Radio Sawa, also re-appeared on shortwave in late March, probably to reach a wider audience within the region. On 27 March, just at the height of International tensions, the BBC World Service ceased broadcasting on shortwave in several key language groups, including Russian. This was forced on them by a massive decrease in their budget from the UK government. A temporary reprieve was granted to Hindi but it demonstrates the decreasing influence shortwave has with the major international broadcasters and their backers.

We were all shocked by the tsunami following a huge earthquake in Japan. Over 25,000 died and millions were made homeless as whole villages and towns were swept away. The images were indeed powerful. It was followed by another major calamity with major damage being done to the Fukushima nuclear power facilities. A major leak of radiation followed a meltdown of the nuclear core. This led to a further mass evacuation in a 40 km radius in extremely cold weather. People were anxious to ascertain the latest situation and as the local media was severely damaged, many turned to shortwave radio as they distrusted local sources. Unfortunately many international broadcasters had long abandoned Japanese and they had to rely on other language services. Radio Japan, or as it is now known as NHK World, provided an extensive coverage of the major disaster in their Japanese and other languages on shortwave and on TV. Also Radio Australia in Melbourne increased their broadcasts to Japan for the estimated 8500 Australian expatriates estimated to be there at that time.

Incidentally I wonder if Family Radio in Oakland, California, will continue after May 21? I have previously referred to the prediction of Harold Camping, the director of this religious network, that the World will end at Noon Jerusalem time. He has been quite adamant about it. It should be interesting on May 22 if the World is still here and he will have a lot of explaining to do. One wonders about the huge bills Family Radio must have amassed in spreading this message by hiring air time over many relay sites.

73 and good listening.

Robin L. Harwood

The road to Maldon

Jack Bramham VK3WWW

Competitor from Japan. Ballarat 2003. Photo by John Longayroux VK3PZ.

During the week of 23-28 September 2011 the WIA will be hosting the Eighth Region 3 ARDF Championships.

This is not the first time WIA has hosted the championships: the first was the Second Region 3 ARDF Championships held in Townsville in the year 1996. Next was the Fifth Region 3 champs held in Ballarat in 2003. Regional events are held in the odd years and World Championships in the even years. For the 8th Region 3 ARDF Championships we can expect competitors from the following Region 3 Societies: CRSA China, KARL Korea, JARL Japan, NZART New Zealand, MARTS Malaysia. Outside of Region 3 we are expecting competitors from. ARRL USA, KFRR Kazakhstan, CRC Croatia. In all over 100 international competitors will attend.

So, from 23 September the Blue Light Camp in Maldon Victoria *http://bluelightcamp.com/* will have a very international flavour. Along with the international participants there will be a team from VK.

Here is the proposed program of events:

Friday 23 September Arrival Day
Saturday 24 September Equipment Check and Opening Ceremony
Sunday 25 September 2 m ARDF Competition
Monday 26 September Tour Day
Tuesday 27 September 80 m ARDF Competition and Closing Banquet/Prizes
Wednesday 28 September Departure Day

As ARDF is very similar to orienteering, there are plenty of orienteers that participate in ARDF events. Following the ARDF Championships are the Oceania Orienteering Championships and Australian Championships. Some of the ARDF Competitors will stay on and contest the orienteering event as well.

Continued on page 56

Electronics Technician/ Technical Officer

EMC Services (EMCS) is a small vibrant Australian company based in the northern suburbs of Sydney, serving all states of Australia. We provide engineering consultancy and testing services associated with the radio, TV, telecommunications, transport and power industries specifically on issues associated with the electromagnetic compatibility of equipment and the hazards of electromagnetic fields. EMCS is Australia's most experienced company in EMC and EMR and a leader in its field.

The position

We are seeking a bright Electronics Technician/Technical Officer with some prior experience in radiofrequency measurements who is looking towards a career in a test environment and willing to travel. The position will require you to learn new techniques, exert initiative and be able to work without supervision on some projects.

In your new role, you will be responsible for testing a variety of electrical and electronic equipment for conformance to Australian and International EMC and EMR standards both in a laboratory environment and in the field. The work will be performed under the direction of an experienced engineer.

Qualifications and Skills Required

You must have a sound knowledge of basic radio frequency theory together with a relevant qualification from a TAFE or the defence forces or equivalent or adequately advanced in a related course. Additionally, you must be fluent in the English language and able to prepare basic reports associated with the work you perform. Self motivation and a willingness to learn are essential with a preparedness to be flexible and travel interstate from time to time for periods of a few days. A likeable personality is necessary with an ability to interface directly with clients.

In addition to your base salary the successful candidate will also be eligible for a generous incentive bonus each year and other gratuities. The position offers career growth potential for the right person. A salary above market rates will be negotiated according to your qualifications.

Please contact Geoff Garrett
by email: *Geoff@emc.com.au*
by phone: 9975 4555
EMC Services Pty Ltd

Hamads

FOR SALE – VIC

Nally Tower, three section fold down type from a deceased estate, ex VK3AYF. $900 ONO.
Phone 03 9707 0438. The tower can be viewed at Endeavour Hills, and can be delivered.

FOR SALE – NSW

Amateur Radio Gear:
4 way N-Switch, Filters, Mag. Bases and mobile whips, negotiable.
MDS Down Converter, $5
Satellite Equipment Package:
2.4 m mesh dish on polar mount, Chaparral C-Band Polarator feed, Norsat Gold 15K C-Band LNB, 24" actuator, Winersat WR920 analogue receiver as dish and feed controller, $220.
Satellite Receivers:
Humax IRCI 5400 $90
UEC DSD660, $90
Nokia 9500S with DVB2000 software, $90
Xanadu DSR, $20
Other parts:
Chaparral CoRotor II C/Ku feed fitted with Norsat Gold 15K C-Band LNB and Gardiner .7dB Ku LNB, $100
Dynalink C-Band LNBF 25K, $20
California Amp C-Band LNBF 25K, $20
Chaparral Model C Ku LNB, 9.75/10.75GHz LOs, $10
ACESAT Twin Ku LNBFs, $20 ea
California Amp Ku LNBF, $10
Sharp Ku LNBFs, $15 ea
DX Antenna DSA527N Ku LNBF, $5
DX Antenna DSA527D Ku LNBFs, $5ea
Zinwell SAB-09C Coax Relays, $15ea
4 x Irdeto CAMs, not CI, various ages and S/W, $20ea
Other misc parts, feeds, Power inserters, DiSEQc switches.
Contact Roger Woodward VK2WW at *vk2ww@hotmail.com* or on 02 9546 1927.

WANTED – NSW

Swan TV-2 transverter for two metres. Any condition. Cash buyer. Please contact Chris VK2CY QTHR, *vk2cy@wia.org.au* or phone 02 9763 1407 anytime.

FOR SALE – SA

The popular VK5JST Antenna Analyser kits are still available (see AR article, May, 2006). Why not build yourself an extremely useful item for your shack, and improve your HF antenna efficiency? For more details see *www.scarc.org.au*
Contact SCARC, PO Box 333, Morphett Vale SA. 5162, or email *kits@scarc.org.au*

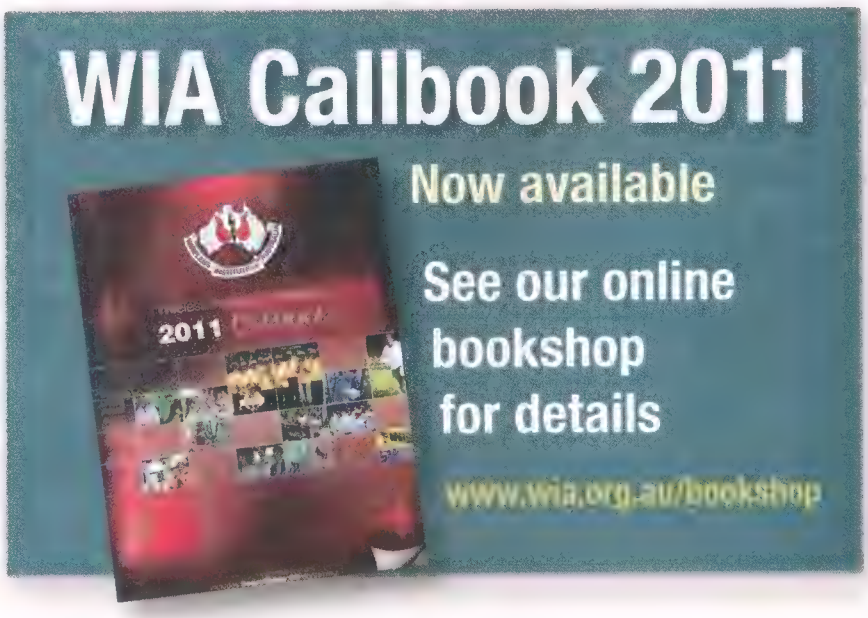
Kenwood TM-D710A, 2 m/70 cm, 50 W, dual-band, dual in-band receive, 1000 memories, has all latest features. An excellent performer. Current model as new in box with all supplied accessories. S/N 90800396, it cost me $895, will sell for $680 ONO.
Icom IC-2SA, 2 m handheld, S/N 4754, $120.
Contact John VK5OO QTHR, or phone 0412 000 076.

ADVERTISERS INDEX

Av-com	55
Com-an-tena	19
Cookson (Jackson Bros)	55
Hamak Electrical Industries	55
Icom	OBC
Jaycar	17
Silver Springs	55
TET-Emtron	31
TTS	33, 55
Yaesu (Vertex)	IFC

FOR SALE – NORTHERN TERRITORY

Codan auto tune antenna, type-9350, plus S/S whip and spring. All cables and earth spare wheel bracket. Cost $600.00.
Contact: Ken VK8FAAV, phone: 02 6557 8162.



About Hamads

- Submit by **email (MUCH PREFERRED)** or if written and mailed please print carefully and clearly, use upper AND lower case.
- Deceased estates Hamads will be published in full, even if some items are not radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from those who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising on these pages Contact admanager@wia.org.au.
- Copy to be received by the deadlines on page 1 of each issue of Amateur Radio.
- Separate forms for For Sale and Wanted items. Include name, address STD telephone number and WIA membership number.

'Hamads'
PO Box 2042
BAYSWATER VIC 3153
hamads@wia.org.au

TRADE PRACTICES ACT
It is impossible for us to ensure that the advertisements submitted for publication comply with the Trade Practices Act 1974. Therefore, advertisers will appreciate the absolute need for themselves to ensure that the provisions of the Act are strictly complied with.

VICTORIAN CONSUMER AFFAIRS ACT
Advertisements with only a PO Box number address cannot be accepted without the addition of the business address of the box-holder or seller of the goods.

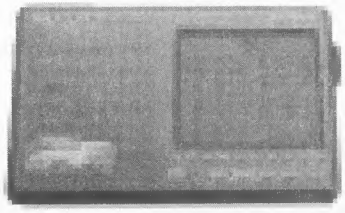
AMIDON
FERROMAGNETIC CORES
tts systems
Phone 03 5977 4808. Fax 03 5977 4801
info@ttssystems.com.au

VKHAM.COM
AUSTRALIAN AMATEUR RADIO
Hundreds of pages and links related to Amateur Radio and radio in general
HOME OF
- VK Classifieds
- VK Auctions
- VKs on the Internet

Repeater Maps, Software, Prefix Maps and more...

RM Products Italy
are now available in Australia after the appointment of
Hamak Electrical Industries Pty Ltd
as distributor for RM products
Visit the Hamak website at
Hamak.com.au
for
Linear amplifiers, Power supplies and accessories

DEGEN 1103 HF Receiver
Pocket sized, 100 kHz-29,999Khz



LCD display, SSB, AM wide/narrow, FM stereo, DX/Local, 10 m longwire NimH batts & charger, earphone & carrycase included. Full review Silicon Chip Dec 2006

ONLY $159 with 12 month warranty
Av-Comm Pty Ltd
24/9 Powells Rd
Brookvale NSW 2100
Tel: 02 99394377
Fax: 02 99394376
www.avcomm.com.au

METAL WORK
Sheet - Turning - Milling
- **Radio chassis**
- **Dial Hardware**
- **Speciality components for vintage radios**
- **Custom work**

www.silversprings.net.au
Tony 0411 144 447

JACKSON BROS
www.jacksonbrothers.com.au
Highest quality products made by UK craftsmen
Variable and trimmer capacitors, reduction drives, dials, ceramic standoffs
CATALOGUES, PRICE LISTS AVAILABLE
HAMMOND ENCLOSURES
HAMMOND MANUFACTURING *Large range of quality electronic enclosures for the discerning Radio Amateur.*
Diecast, extruded aluminium and plastic enclosures and instrument cases. As seen in many ARRL projects.
Cookson Controls CHARLES I COOKSON PTY LTD
11-13 Port Rd Queenstown SA 5014
Tel: (08) 8240 3200 Fax: (08) 8240 3233
sales@jacksonbrothers.com.au
ccookson@hammfg.com
ALL MAJOR CREDIT CARDS ACCEPTED
SOLE AGENTS AUSTRALIA AND NEW ZEALAND

Directory

National Office

Unit 20, 11-13 Havelock Road
PO Box 2042 BAYSWATER VIC 3153

Contact 10 am to 4 pm weekdays
Phone **03 9729 0400** Fax **03 9729 7325**
nationaloffice@wia.org.au
http://www.wia.org.au

The Amateur Service
... a radio communications service for the purpose of self training, intercommunication and technical investigation carried out by amateurs, that is, by duly authorised persons interested in radio technique with a personal aim and without any pecuniary interest.
56 ITU Radio Regulations

Advisory Committees

New South Wales/ACT Advisory Committee
Email: vk2advisory@wia.org.au
John Bishop VK2BK*
Dominic Dahl VK2YDD
Timothy Mills VK2ZTM / VK2UJ
Gilbert Hughes VK1GH

Victorian Advisory Committee
Email: vk3advisory@wia.org.au
Bob Tait VK3XP *
Luke Steele VK3HJ
Noel Ferguson VK3FGN
Chris Chapman VK3QB

Queensland Advisory Committee
Email: vk4advisory@wia.org.au
Don Wilschefski VK4BY
Kevin Johnston VK4UH
Michael Charteris VK4QS*
Ken Fuller VK4KF

South Australian Advisory Committee
Email: vk5advisory@wia.org.au
David Clegg VK5KC *
Peter Reichelt VK5APR
Ben Broadbent VK5BB
Trevor Quick VK5ATQ

Western Australian Advisory Committee
Email: vk6advisory@wia.org.au
Martin Stretton VK6ZMS*
Heath Walder VK6TWO
Craig Lamb VK6FLAM

Tasmanian Advisory Committee
Email: vk7advisory@wia.org.au
David Potter VK7YUM
Clayton Reading VK7ZCR
Justin Giles-Clark VK7TW *
Peter Rumble VK7IY

Northern Territory Advisory Committee
Email: vk8advisory@wia.org.au
Peter Blackadder VK8HPB*
Garry Woods VK8GW
Alan Baker VK8AB
Mark Sellers VK8MS

**Denotes nominated by the WIA Board ("Nominated Member")*

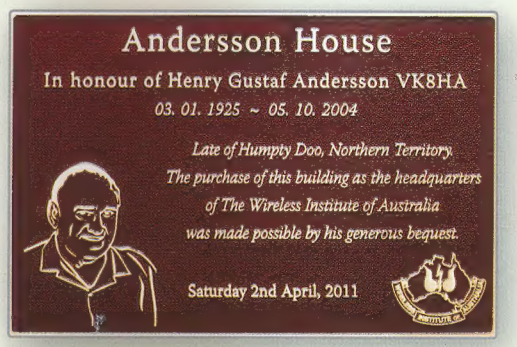
The road to Maldon

Continued from page 53

Organizing an event of this stature takes a lot of work; most of it is done by members of the Victorian ARDF Group. Information about the group and more detailed information about the Region 3 ARDF Championships can be sourced on the ARDF group's home page: *www.ardf.org.au* For a direct link to the Championships page go to: *http://r3.ardf.org.au/*

If you are interested in attending as a competitor or volunteer please contact the WIA ARDF Coordinator Jack Bramham by email: *vk3www@wia.org.au*

Large teams from L-R Korea, Japan, Kazakhstan & China - Ballarat 2003. Photo by John Longayroux VK3PZ.


Andersson House
In honour of Henry Gustaf Andersson VK8HA
03. 01. 1925 ~ 05. 10. 2004
Late of Humpty Doo, Northern Territory.
The purchase of this building as the headquarters
of The Wireless Institute of Australia
was made possible by his generous bequest.
Saturday 2nd April, 2011

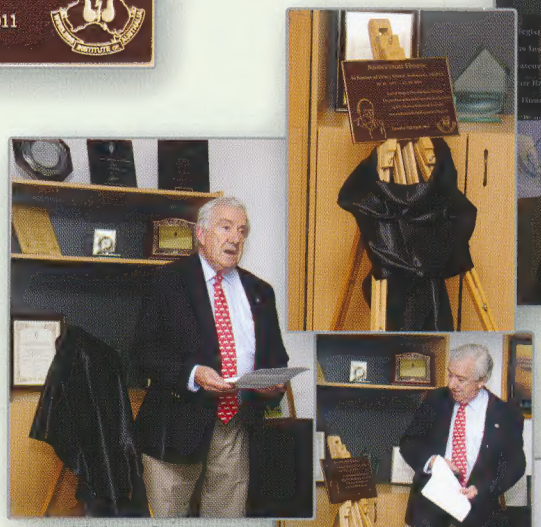
Andersson House

The formal opening of the WIA premises at Unit 20, 11-13 Havelock Road, Bayswater, took place at 4:00 pm Saturday, April 2, 2011.

The premises was named ***Andersson House*** in honour of Henry Andersson VK8HA. Henry was an Honorary Life Member of the WIA, who passed away October 6 2004. He left his property at Humpty Doo, near Darwin, to the WIA. That generous bequest provided much of the funds needed to enable the purchase. Light refreshments were served and the memorial plaque was unveiled by WIA President Michael Owen VK3KI.

For those not able to attend in person, members of Melbourne's Eastern and Mountain District Radio Club were able to transmit the formal opening and dedication live via Melbourne's VK3RTV amateur television repeater, which was also viewable worldwide via the BATC ATV website.

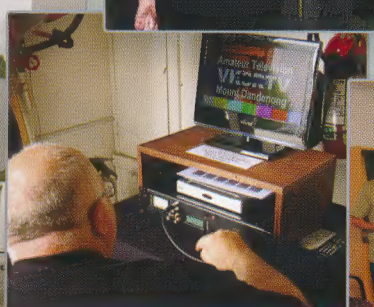
Intended location for mounting the commemorative plaque.



Michael Owen VK3KI official naming of Andersson House.

Directors at formal openings.

Warehouse area.



ATV broadcast equipment.

Unrivalled

IC-9100 - The Ultimate All-Rounder

- Fully Covers HF, 50MHz, 144MHz, 430/440MHz and 1200MHz*
- Satellite Mode Operation
- D-STAR DV Mode (with Optional UT-121)
- Simultaneous Receive on Two Different Bands
- Optional 3kHz and 6kHz first IF filters for the HF/50MHz Band
- Built-In Band Scope
- Built-In Automatic Antenna Tuner for HF/50MHz Band

*Optional UX-9100 1200MHz Band Unit is Required

DIGITAL | D-STAR

ICOM

ICOM 484

To find out more about our latest products, call Icom on 03 9549 7500 or visit www.icom.net.au

Amateur
Volume 79 Number 5 MAY 2011 Print Post Approved PP349181/0042